



IN THE  
**Supreme Court of the United States**  
OCTOBER TERM, 1995

LOTUS DEVELOPMENT CORPORATION,

*Petitioner,*

—v.—

BORLAND INTERNATIONAL, INC.,

*Respondent.*

ON WRIT OF CERTIORARI TO THE UNITED STATES  
COURT OF APPEALS FOR THE FIRST CIRCUIT

**JOINT APPENDIX  
VOLUME I OF II  
(Pages J.A. 1 to J.A. 539)**

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06/28/90	1 (N.D. Cal.)	Complaint for Declaratory Judgment, entered 06/29/90
07/02/90	1	Complaint, entered 07/03/90
07/04/90	3 (N.D. Cal.)	Amended Complaint for Declaratory Judgment, entered 07/03/90
07/11/90	5 (N.D. Cal.)	Application of Borland International, Inc. for Preliminary Injunction, entered 07/12/90
07/11/90	6 (N.D. Cal.)	Application for Temporary Restraining Order, entered 07/12/90
07/11/90	7 (N.D. Cal.)	Memorandum of Points and Authorities in Support of Motion for Temporary Restraining Order and Preliminary Injunction Enjoining Prosecution of Later Duplicate Boston Action, entered 07/12/90
07/27/90	19 (N.D. Cal.)	Notice of Cross-Motion and Cross-Motion to Dismiss, Stay or Transfer (with related Memorandum of Points and Authorities in Opposition to Motion for Preliminary Injunction and in Support of Cross-Motion to Dismiss, Stay or Transfer), entered 07/27/90
07/27/90	4	Answer and Demand for Jury Trial, entered 07/31/90

<sup>1</sup> Unless noted otherwise, "Docket Number" refers to the docket of the United States District Court for the District of Massachusetts, 90-CV-11662. Docket entries followed by "(N.D. Cal.\*)" refer to the docket in the case entitled *Borland Int'l, Inc. v. Lotus Development Corp.*, No. C 90-20386 VRW (N.D. Cal.).

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08/31/90	43 (N.D. Cal.)	Hearing before Judge Vaughn R. Walker, entered 09/05/90
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09/30/91	90	Videotape Exhibit to Declaration of Jack Oswald, entered 10/01/91
09/30/91	87	Borland's Motion for Summary Judgment on the Dispositive Issue of Copyrightability, entered 10/01/91

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11/01/91	118	Videotape Exhibit to Declaration of Larry Roshfeld, entered 11/08/91
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11/25/91	127	Videotape Exhibit to Declaration of Erick Hachenberg, entered 11/27/91
03/20/92	164	Opinion of the United States District Court (Keeton, J.), dated March 20, 1992 (Cert. App. 145a), entered 03/23/92
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05/04/92	177	Plaintiff's Response to Borland's Memorandum in Support of Renewed Motion for Summary Judgment, entered 05/7/92
06/29/92	189	Borland's Motion for Leave to Submit Supplemental Memorandum re: Additional Authority, entered 06/29/92
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09/14/92	210	Plaintiff's Memorandum of Law in Opposition to Borland International's Motion for Certification, entered 09/16/92
09/18/92	227	Reply Memorandum in Support of Borland's Motion to Certify, entered 09/23/92
09/18/92	246	Reply Memorandum in Support of Borland's Motion for Reconsideration, entered 11/30/92
09/23/92	241	Conference before Judge Keeton, denying Motion to Certify Question re: Copyrightability for Interlocutory Appeal, entered 10/02/92
10/15/92	239	Brief of Amicus Curiae Concerning Certification of Question for Interlocutory Appeal, entered 10/16/92
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12/21/92	258	Borland's Memorandum of Law in Opposition to Lotus' Motion for Leave to Supplement Complaint, entered 12/21/92
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01/21/93	307	Answer to Supplemental Complaint, entered 01/21/93
01/29/93	320	Telephone Conference before Judge Keeton re: upcoming trial, entered 02/02/93
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02/26/93	344	Plaintiff's Fair Use Memorandum, entered 03/04/93
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03/11/93	346	Borland's Response to Plaintiff's Fair Use Memorandum, entered 03/15/93
03/12/93	347	Plaintiff's Memorandum in Opposition to Motion to Amend Original Answer, entered 03/15/93
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04/02/93	405	Day Six of Nonjury Trial (Phase II), entered 08/31/93
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06/30/93	374	Opinion of the United States District Court dated June 30, 1993 (Keeton, J.), as amended August 19, 1993 (Cert. App. 71a), entered 07/01/93
07/27/93	378	Borland's Renewed Motion for Certification, entered 07/29/93
07/27/93	379	Memorandum of Points and Authorities in Support of Borland's Renewed Motion to Certify, entered 07/29/93
08/10/93	388	Plaintiff's Memorandum of Law in Opposition to Borland's Renewed Motion for Certification, entered 08/13/93
08/12/93	398	Opinion of the United States District Court dated August 12, 1993 (Keeton, J.), as amended August 19, 1993 (Cert. App. 29a), entered 08/24/93
08/16/93	390	Reply Memorandum in Support of Borland's Renewed Motion to Certify, entered 08/24/93
08/17/93	395	Brief of Amici Curiae User Groups In Support of Certification of

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08/19/93	397	Permanent Injunction (Cert. App. 69a), entered 08/24/93
09/10/93	408	Notice of Appeal of Defendant Borland International, entered 09/14/93
12/03/93	(1st Cir.)	Brief Amicus Curiae of Copyright Law Professors, entered 12/23/93
12/08/93	(1st Cir.)	Brief of Amicus Curiae of Software Entrepreneurs' Forum, entered 12/23/93
12/08/93	(1st Cir.)	Brief Amicus Curiae of Computer Software Industry Association, entered 12/23/93
12/10/93	(1st Cir.)	Brief Amicus Curiae of American Committee for Interoperable Systems, entered 12/23/93
12/14/93	(1st Cir.)	Brief of Defendant/Appellant Borland International, Inc., entered 12/14/93
12/14/93	(1st Cir.)	Brief Amicus Curiae of Professor Dennis S. Karjala and Professor Peter S. Menell, entered 12/23/93

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12/14/93	(1st Cir.)	Amicus Brief of Computer Scientists Re Copyrightability of Computer Languages, entered 12/23/93
12/14/93	(1st Cir.)	Brief of Amici Curiae (Chicago Computer Society, Diablo Users Group, Danbury Area Computer Society, IBM Ab Users Group, Kentucky-Indiana Personal Computer Users Group, Long Island PC Users Group, Napa Valley PC Users Group, Pacific Northwest PC Users Group, Palmetto Personal Computer Club, Philadelphia Area Computer Society, Inc., Phoenix IBM PC Users Group, Pinellas IBM PC Users Group, Quad Cities Computer Society, Inc., Quattro Pro Users Group, Sacramento PC Users Group, San Francisco PC Users Group, Santa Barbara Twin Cities PC Users Group, Warner Robbins Personal Computer Association), entered 12/23/93
01/27/94	(1st Cir.)	Brief of Amicus Curiae Computer and Business Equipment Manufacturers Association, entered 02/10/94
01/28/94	(1st Cir.)	Brief of Amici Curiae Adobe Systems Inc.; Apple Computer Inc.; Computer Associates International Inc.; Digital Equipment Corporation; and International Business

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01/28/94	(1st Cir.)	Brief of Plaintiff/Appellee Lotus Development Corporation, entered 01/31/94
02/14/94	(1st Cir.)	Reply Brief of Defendant/Appellant Borland International, Inc., entered 02/18/94
03/01/94	(1st Cir.)	Motion for Leave to Add Signatures to Amicus Brief of Computer Scientists, entered 03/01/94
03/01/94	(1st Cir.)	Order Granting Motion for Leave to Add Signatures to Amicus Brief of Computer Scientists, entered 03/01/94
04/06/94	(1st Cir.)	Oral Argument (Breyer, C.J., Torruella, Stahl, JJ.), entered 04/06/94
07/18/94	(1st Cir.)	Order: upon recusal of Chief Judge Breyer, case rescheduled for rehearing at the October 1994 Session, entered 07/18/94
10/06/94	(1st Cir.)	Oral Argument (Torruella, Boudin, Stahl, JJ.), entered 10/06/94

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03/09/95	(1st Cir.)	Opinion of the United States Court of Appeals for the First Circuit (Cert. App. 1a), entered 03/09/95
03/31/95	678	Informal Mandate of Court of Appeals, entered 03/31/95

J.A. 13

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

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Civil Action  
No. 90-11662K

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LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.,

*Defendant.*

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COMPLAINT

Plaintiff, LOTUS DEVELOPMENT CORPORATION, by its undersigned attorneys, complains of the defendant and alleges as follows:

NATURE OF THE ACTION

1. This is an action for copyright infringement arising out of defendant's sale of computer software programs called "Quattro" and "Quattro Pro". Both programs contain deliberate, command-for-command copies of the user interface, and in particular of the menu structure and commands, of plaintiff's highly successful and copyrighted computer software program, "Lotus 1-2-3".



JURISDICTION AND VENUE

2. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. Sections 1331, 1332 and 1338.

3. Venue is proper in this Court pursuant to 28 U.S.C. Sections 1391 and 1400, in that defendant is and was at all relevant times doing business in this judicial district on its own behalf and through its agents, and may be found in this judicial district, and the claims asserted herein arise, at least in part, in this judicial district.

THE PARTIES

4. Plaintiff LOTUS DEVELOPMENT CORPORATION ("Lotus") is a corporation organized and existing under the laws of the State of Delaware, with its principal place of business at 55 Cambridge Parkway, Cambridge, Massachusetts. Lotus is principally engaged in the business of designing, developing and marketing computer application software programs. "1-2-3" is a registered trademark for the software products sold under that name by plaintiff. "Lotus" is a registered trademark of Lotus Development Corporation.

5. Defendant BORLAND INTERNATIONAL, INC. ("Borland"), upon information and belief, is a corporation organized and existing under the laws of the State of California with its principal place of business at 1800 Green Hills Road, Scotts Valley, Santa Cruz County, California. Upon information and belief, Borland is engaged in the business of marketing and distributing personal computer programming language and application software programs on a nationwide basis, including within the District of Massachusetts, on its own behalf and through its agents.

THE COPYRIGHTED WORKS

6. In 1982, employees of Lotus created and developed an original computer software program entitled "Lotus 1-2-3" or "1-2-3". Lotus 1-2-3 provides users of certain computers with the ability to perform certain tasks with their computers, most notably the accumulation, arrangement and calculation of data and text in what is known as a "spreadsheet" format. Lotus 1-2-3 also contains database storage and management and graphics presentation capabilities which are connected or "integrated" with its spreadsheet capabilities. Lotus 1-2-3 is sold as part of a package which includes associated user instruction manuals and other documentation.

7. Lotus 1-2-3 communicates with users of the program through its "user interface". The user interface, *inter alia*, displays a series of menus arranged in a hierarchical "menu structure", which present the user with a variety of choices for operating the program, called "commands" or "menu commands".

8. Lotus 1-2-3, including its user interface and menu structure, contains material wholly original with and developed by Lotus and is copyrightable subject matter under the laws of the United States.

9. The original version of Lotus 1-2-3, called "Lotus 1-2-3, Release 1", was first sold to the public by Lotus in January 1983.

10. Certain revisions were made to Lotus 1-2-3, Release 1, and the revised edition of the program was sold to the public as "Lotus 1-2-3, Release 1A", commencing in mid-1983. Release 1A, including its user interface and menu structure, is substantially similar to and derived from Release 1.

11. Commencing in September 1985, Lotus published and began to ship a revised version of Lotus 1-2-3, known as "Release 2.0". Release 2.0, including its user interface and menu structure, is substantially similar to and derived from

the original version of Lotus 1-2-3. As used herein, "Lotus 1-2-3" refers to Release 1, Release 1A and Release 2.0.

12. Lotus complied in all respects with the provisions of 17 U.S.C. Section 101 *et seq.* and all other laws governing copyright, to secure the exclusive rights and privileges in and to copyright for Lotus 1-2-3. Lotus received from the Registrar of Copyrights certificates of registration for Lotus 1-2-3 as follows:

<u>Title</u>	<u>Certificate NO.</u>	<u>Date</u>
Lotus 1-2-3 (Release 1)	TX 1-223-501	12/23/83
Lotus 1-2-3 (Release 1A)	TX 1-223-502	12/23/83
Lotus 1-2-3 (Release 2.0)	TX 1-694-602	11/08/85

13. Each and every element of original and copyrightable subject matter contained in Lotus 1-2-3, including its user interface and menu structure, and each and every element of copyrightable subject matter which Lotus alleges defendant has infringed herein, is and has at all times been fully covered by its registered copyrights for Lotus 1-2-3.

14. Since its inception, Lotus 1-2-3 has been legally produced only by Lotus or by its authorized licensees and all copies of it made by Lotus have been offered with notice of copyright affixed therein and on the package in strict conformity with the provisions of the federal copyright laws.

15. At all times, Lotus has been and is the sole proprietor of all rights, title and interest in and to the copyrights in Lotus 1-2-3.

#### THE ACTS OF INFRINGEMENT

16. Since November 1987 or earlier, the exact date as yet being unknown to plaintiff, defendant infringed plaintiff's copyrights in Lotus 1-2-3 by copying, publishing, distributing, marketing and placing upon the public market in interstate commerce, and/or causing the copying, publishing, distributing, marketing and placing in interstate commerce of, a computer software program called "Quattro".

17. Quattro contains, as one of two user interfaces provided to users of the program, a user interface copied from, and substantially similar or identical to, Lotus 1-2-3 in numerous respects, including, in particular, its menu structure and command choices. Attached hereto as Exhibit A is a true copy of a chart included in the Quattro "Reference Guide", sold together with the Quattro program, which depicts the "Menu Tree" or menu structure of the infringing user interface. As the chart indicates, only those menu items indicated with a square bullet are not found in Lotus 1-2-3; such items are described in the chart as "extensions to Lotus 1-2-3 menus".

18. Commencing in November 1989 or earlier, the exact date being unknown to plaintiff, defendant has infringed plaintiff's copyrights in Lotus 1-2-3 by copying, publishing, distributing, marketing and placing in interstate commerce, and/or causing the copying, publishing, distributing, marketing and placing in interstate commerce of, a computer software program called "Quattro Pro".

19. Quattro Pro contains, as one of three user interfaces provided to users of the program, a user interface copied from, and substantially similar or identical to, Lotus 1-2-3 in numerous respects, including, in particular, its menu structure and command choices.

20. Upon information and belief, Quattro Pro is derived in substantial part from Quattro, including those elements that are copied from Lotus 1-2-3.

21. The deliberate aim and result of defendant's copying is to provide a "clone" or identical recreation of substantial and significant elements of the Lotus 1-2-3 user interface, and in particular of its menu structure, in defendant's Quattro and Quattro Pro programs.

22. Indeed, the Quattro Reference Guide specifically refers (at page 22) to the menu structure copied from Lotus 1-2-3 as the "Lotus-compatible menu tree". The "User's Guide" to Quattro Pro, sold together with that program, refers to the



menu structure copied from Lotus 1-2-3 as the "123-compatible menu tree" (at page 4) and as the "123-compatible menus" (passim). Virtually every command contained in the Lotus 1-2-3 menus is not only replicated in the Quattro and Quattro Pro "compatible menus", but also is presented in virtually the same structure, sequence and organization as in Lotus 1-2-3, and instructs the computer to perform the same tasks.

23. A user of Quattro or Quattro Pro can invoke the menu structure copied from Lotus 1-2-3 by typing "Q123" when initially loading either program into the computer's resident memory. Alternatively, each program contains a menu command called "Menu Tree" which provides the user with the ability to cause either program to display the copied Lotus 1-2-3 menu structure. Following invocation of the "Menu Tree" command, selection of the 1-2-3 menu structure is indicated to the Quattro user by the preset notations "123.RSC" or "123.ALT"; in Quattro Pro by the preset notation "123.MU".

24. Borland's acts were performed without the permission, license or consent of Lotus.

25. As a result of defendant's infringement of plaintiff's copyrights in Lotus 1-2-3, plaintiff has suffered, and is continuing to suffer, irreparable injury. The copyrights infringed by defendant contribute fundamentally to plaintiff's revenues, commercial prestige, goodwill and profits. Defendant has sold and/or disseminated or caused to be sold and/or disseminated, and intends to sell and/or disseminate or cause to be sold and/or disseminated, its infringing products to plaintiff's clients, customers, and others, and to otherwise use or cause to be used its infringing products for its own commercial purposes. In so doing, defendant has caused and will cause Lotus to lose current and potential business, market position, goodwill, prestige and profits all related to the sale of Lotus 1-2-3. Plaintiff cannot be adequately compensated for these actual and threatened injuries by damages alone.

26. By reason of defendant's acts of infringement alleged above, Lotus has suffered damage to its business in the form of diversion of trade, loss of profits, injury to goodwill and reputation, and a dilution in the value of its rights, all in amounts which are not yet fully ascertainable.

27. Defendant's acts of infringement alleged above were performed willfully, intentionally and deliberately. Defendant commenced sale of Quattro and Quattro Pro after Lotus had publicly declared its belief that the user interface and menu structure of Lotus 1-2-3 were covered by its copyrights, and after Lotus had expressed in word and deed its determination to enforce its legal rights thereto. Defendant had full knowledge of the various expressions by Lotus of its legal position commencing as early as January 1987.

28. Because defendant's acts of infringement alleged above were willful, intentional and deliberate, Lotus is entitled to an award of its attorney's fees incurred in this action pursuant to 17 U.S.C. Section 505.

29. Defendant's willful and deliberate acts of infringement entitle Lotus to an award of its actual damages incurred and/or to an accounting by the defendant of any profits, gains and advantages derived by it as a result of the infringing activities, or to an award of the maximum measure of statutory damages for each act of infringement.

WHEREFORE, plaintiff prays for judgment as follows:

1. Under the authority of 17 U.S.C. Section 502, for a preliminary and permanent injunction restraining Borland from, *inter alia*, distributing, publishing or marketing the computer software programs called Quattro or Quattro Pro or in any way infringing Lotus' copyrights in Lotus 1-2-3;

2. Under the authority of 17 U.S.C. Section 1118, for an Order requiring the impounding and destruction of all Borland's products or goods that infringe any of plaintiff's copyrights;

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3. For an Order awarding Lotus actual damages incurred as the result of Borland's acts of infringement, and/or an accounting to Lotus by Borland of any profits derived by it from its infringing activities; or in the alternative awarding Lotus the maximum statutory damages for each act of infringement committed by Borland;

4. Under the authority of 17 U.S.C. Section 505, for an Order awarding Lotus its attorney's fees incurred in this action;

5. For costs of suit incurred in this action; and

6. For such other and further relief as this Court may deem proper.

Dated: July 2, 1990

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UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

Civil Action No. 90-11662-K

LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

v.

BORLAND INTERNATIONAL, INC.,

*Defendant.*

ANSWER AND DEMAND FOR JURY TRIAL

Defendant Borland International, Inc. ("Borland") answers the complaint of Lotus Development Corporation ("Lotus") as follows:

FIRST DEFENSE

1. Borland admits that plaintiff purports to bring an action for copyright infringement arising out of Borland's sale of computer software programs called "Quattro" and "Quattro Pro". Except as expressly admitted herein, Borland denies each and every allegation contained in paragraph 1.

2. Borland admits that the Court has subject matter jurisdiction as conferred by 28 U.S.C. §§1331 and 1338. Borland denies each and every other allegation contained in paragraph 2.

3. Borland admits that it is doing business in this judicial district. Borland denies that venue is proper in this Court.



Borland is without knowledge or information sufficient to form a belief as to the truth of the remaining allegations in paragraph 3.

4. Borland admits that Lotus is a corporation organized and existing under the laws of the State of Delaware, with its principal place of business in Cambridge, Massachusetts. Borland is without knowledge or information sufficient to form a belief as to the truth of the remaining allegations in paragraph 4.

5. Borland admits that its principal place of business is at 1800 Green Hills Road, Scotts Valley, Santa Cruz County, California. Borland further admits that it is engaged in the business of marketing and distributing personal computer programming language and application software programs on a nationwide basis, including within the District of Massachusetts. Borland denies the remaining allegations contained in paragraph 5.

6. Borland admits that there is a computer software program entitled "Lotus 1-2-3"; that Lotus 1-2-3 provides users of certain computers with the ability to perform certain computer-assisted tasks including the accumulation, arrangement, and calculation of data and text in what is known as a spreadsheet format; that Lotus 1-2-3 also contains certain database storage and management and graphics presentation capabilities; and that Lotus 1-2-3 is sold as part of a package which includes user instruction manuals and other documentation. Borland is without knowledge or information sufficient to form a belief as to the truth of the remaining allegations in paragraph 6.

7. Borland admits that users of Lotus 1-2-3 communicate with Lotus 1-2-3 by various means. Borland is without knowledge or information sufficient to form a belief as to the truth of the remaining allegations in paragraph 7.

8. Borland denies that Lotus 1-2-3 is copyrightable subject matter under the laws of the United States, at least to the

extent apparently claimed by Lotus for the purposes of the present action. Borland is without knowledge or information sufficient to form a belief as to the truth of the remaining allegations in paragraph 8.

9-15. Borland is without knowledge or information sufficient to form a belief as to the truth of the allegations within paragraphs 9, 10, 11, 12, 13, 14, and 15.

16. Borland denies each and every allegation contained in paragraph 16.

17. Borland admits that Quattro offers users the capability to create an unlimited number of alternative commands and offers several examples of command alternatives, and that Exhibit A to the Complaint is a copy of a chart that at certain times has been included in the Quattro "Reference Guide" provided with the Quattro program. Borland denies each and every other allegation contained in paragraph 17.

18-26. Borland denies each and every allegation contained in paragraphs 18, 19, 20, 21, 22, 23, 24, 25, and 26.

27. Borland admits that Lotus has made various statements regarding its copyright positions at various times. Borland denies each and every other allegation contained in paragraph 27.

28-29. Borland denies each and every allegation contained in paragraphs 28 and 29.

## SECOND DEFENSE

Lotus has failed to state a claim upon which relief can be granted.

## THIRD DEFENSE

Lotus does not have a valid copyright in the Lotus 1-2-3 menu structure and commands as alleged in the Complaint, at

least to the extent Lotus alleges Borland has copied, published, distributed, marketed, or placed in interstate commerce any such features; nor can Lotus obtain a valid copyright therein, because the Lotus 1-2-3 menu structure and commands constitute uncopyrightable subject matter.

#### FOURTH DEFENSE

Lotus does not have a valid copyright in the Lotus 1-2-3 menu structure and commands as alleged in the Complaint, at least to the extent Lotus alleges Borland has copied, published, distributed, marketed, or placed in interstate commerce any such features; nor can Lotus obtain a copyright therein, because such features lack originality.

#### FIFTH DEFENSE

Lotus' claims are barred in whole or in part by the doctrine of laches. Borland has manufactured, used, and sold its Quattro products for a substantial period of time. Despite its knowledge of such activities, Lotus failed to assert the claims raised in the Complaint within a reasonable period of time. Borland relied upon this failure by Lotus and would be prejudiced were Lotus permitted now belatedly to assert the claims contained in its Complaint.

#### SIXTH DEFENSE

Lotus' claims are barred in whole or in part by the doctrine of estoppel.

#### SEVENTH DEFENSE

Lotus' claims are barred in whole or in part by the doctrine of waiver.

#### EIGHTH DEFENSE

Borland has not copied, published, distributed, marketed, or placed in interstate commerce any computer software program which infringes upon or violates any rights of Lotus, including any rights that might exist under copyright.

#### NINTH DEFENSE

This Court should dismiss or stay this case on the ground that a case involving the same parties and addressing the identical issues was filed by Borland before Lotus commenced this action and is pending in the United States District Court for the Northern District of California.

#### TENTH DEFENSE

For the convenience of the parties and witnesses, in the interest of justice, this Court should transfer this action to the United States District Court for the Northern District of California.

WHEREFORE, defendant Borland International, Inc. prays for judgment as follows:

A. That the relief requested by Lotus be denied and that the Complaint be dismissed with costs and attorneys' fees to defendant;

B. That such other and further relief be granted as the Court deems just and proper.

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**JURY DEMAND**

Pursuant to Fed. R. Civ. P. 38(b), defendant hereby demands a trial by jury of all issues so triable.

July 27, 1990

/s/ LAURA STEINBERG

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Attorney for defendant  
Borland International, Inc.

**CERTIFICATE OF SERVICE**

I hereby certify that on this day a true copy of the above document was served upon the attorney of record for each party by hand & by federal express.

Date 7/27/90 Laura Steinberg

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**UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF MASSACHUSETTS**

Civil Action No. 90-11662-K

\_\_\_\_\_  
LOTUS DEVELOPMENT CORP.,

Plaintiff,

v.

BORLAND INTERNATIONAL,

Defendant.  
\_\_\_\_\_

**BRIEF AMICUS CURIAE ON BEHALF OF  
THE REGISTER OF COPYRIGHTS**

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J.A. 29

DRAFT FOR INTERNAL USE ONLY

September 29, 1989

The following practices are derived from actual screen display cases examined under the policy established in June 1988. They are not to be considered final, but evolutionary. The Examining Division reserves the right to examine new cases on their own merits.

### SCREEN DISPLAY PRACTICES

A computer program and its related copyrightable screen displays, when owned by the same claimant, must be registered together in a single registration. Generally, when an applicant registers a computer program, no subsequent registration will be permitted for the screens associated with that program. The applicant has the option of sending the required i.d. material for the related screen displays with the i.d. material for the computer program, and has the option of stating a claim in the screen displays on the application.

If a specific claim is made in the screen displays, i.d. material must be deposited for them. All i.d. material for screen displays, even if not expressly claimed on the application, will be examined for copyrightability. If the screens are not copyrightable, the i.d. material for them will be removed from the deposit and retained in a correspondence file. The Office will not allow a specific reference to screen displays if the screens are found not to be copyrightable.

Once registration is made for the computer program, it is considered to extend to any copyrightable screen displays embodied in the program. No second registration will be made for the same version of the work in order to put a specific claim in screen displays on the record. Likewise, if an applicant chooses to register only the screen displays, the

Office will not make a later registration for the computer program.

\* \* \*

[6] 5. Nature of authorship statement includes "menu screens".

a. If the menu screen contains copyrightable authorship *aside from* the menu listings, ask for better statement of authorship, such as "text of screen displays" or "artwork in screen displays".

b. If there is no copyrightable authorship, reject menu screens, which, like a table of contents, are functionally determined and are generally not registrable.

6. Nature of authorship described as "audiovisual display of screens" or "visual displays" or space 1 may refer to "motion picture" or "audiovisual work."

a. Videotape for textual screens and i.d. material for computer program deposited.

Request appropriate i.d. material for textual screens and a Form TX with specific authorship statement. (See item 5 under DEPOSIT.)

b. Videotape for pictorial (not audiovisual) screens and i.d. material for computer program deposited.

Request appropriate i.d. material for screens and Form TX or VA with specific authorship statement, e.g. "artwork on screens, text of computer program," or "technical drawings and text of computer program."

c. Videotape containing only audiovisual material deposited.

Offer computer program registration and request i.d. material for the computer program. Request new application describing authorship as "entire computer program including audiovisual material in screen displays".

\* \* \*

[12] 4. Screen consists of a form designed for recording information that the Office would register as a compilation if fixed in another medium.

Register. Screens are judged by traditional standards of copyrightability. (Be sure it is not a menu-type screen or other screen that may be dictated by function. These are not registrable.)

NOTE: Nature of authorship must state "compilation of terms in screen display(s)". Consult with a Literary Section Head in all these cases.

5. Icons of commonly used symbols, such as a trash can, pencil or file drawer claimed.

Apply de minimis/trivial standards carefully, but do not suggest that the symbol may have become "standard" with a large body of the public.

NOTE: If the claim is in "iconic programming" or "object-oriented programming", such as programming in the Double-Helix language, be sure that space 6 disclaims the icons, which are part of the underlying program. (These are not screen display claims, though the deposit for these computer programs looks like a set of screen displays.)



UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

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Civil Action No. 90-11662-K

---

LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.,

*Defendant.*

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SUPPLEMENTAL COMPLAINT

Pursuant to Rule 15(d), Fed. R. Civ. P., plaintiff LOTUS DEVELOPMENT CORPORATION ("Lotus"), by its undersigned attorneys, hereby supplements its original complaint in this action as follows:

COUNT II

*(Additional Acts of Copyright Infringement)*

1. Since November 1990 or earlier, the exact date as yet being unknown to plaintiff, defendant Borland International, Inc. ("Borland") has infringed plaintiff's copyrights in Lotus 1-2-3, including plaintiff's exclusive right to prepare works derived from the copyrighted work, by copying, publishing, distributing, marketing and placing in interstate commerce and/or causing the copying, publishing, distributing, marketing and placing in interstate commerce, of computer software programs containing a feature described as the "Macro Key Reader" or "Key Reader". These programs are included

in products sold by Borland under the names "Quattro Pro 2.0", "Quattro Pro 3.0", "Quattro Pro 4.0", "Quattro Pro SE", "Quattro Pro 4.01" and "Quattro Pro for Windows".

2. In implementing the Key Reader, Borland has employed a deliberate copy of, and infringing work derived from, the Lotus 1-2-3 menu command hierarchy, macro language and keystroke sequences.

3. Borland first published Quattro Pro 4.01 and Quattro Pro for Windows subsequent to this Court's determination in this action that the Lotus 1-2-3 menu command hierarchy, macro language and keystroke sequences constitute copyrightable expression and are protected by Lotus' copyrights, and with full knowledge of that decision.

4. All of the acts alleged above were performed by Borland without the permission, license or consent of Lotus.

5. Borland's acts of infringement alleged above are willful, intentional and deliberate.

6. As a result of defendant's infringement of plaintiff's copyrights in Lotus 1-2-3, including plaintiff's exclusive right to prepare works derived from the copyrighted work, plaintiff has suffered, and is continuing to suffer, irreparable injury. The copyrights infringed by defendant, including the exclusive right to prepare works derived from the copyrighted work, contribute fundamentally to plaintiff's revenues, commercial prestige, goodwill and profits. Defendant has sold and/or disseminated or caused to be sold and/or disseminated, and intends to sell and/or disseminate or cause to be sold and/or disseminated, its infringing products to plaintiff's clients, customers, and others, and to otherwise use or cause to be used its infringing products for its own commercial purposes. In so doing, defendant has caused and will continue to cause plaintiff to lose current and potential business, market position, goodwill, prestige and profits related to the sale of Lotus 1-2-3. Plaintiff cannot be adequately compensated for these actual and threatened injuries by damages alone.



7. By reason of defendant's acts of infringement alleged above, Lotus has suffered damage to its business in the form of diversion of trade, loss of profits, injury to goodwill and reputation and a dilution in the value of its rights, including the exclusive right to prepare works derived from the copyrighted work, all in amounts which are not yet fully ascertainable.

WHEREFORE, plaintiff prays for judgment as follows:

1. Under the authority of 17 U.S.C. Section 502, for a preliminary and permanent injunction restraining Borland from, *inter alia*, distributing, publishing or marketing the computer software products called Quattro Pro 2.0, Quattro Pro 3.0, Quattro Pro 4.0, Quattro Pro SE, Quattro Pro 4.01 and Quattro Pro for Windows, or any other product containing computer software programs employing Borland's current implementation of the Key Reader, or in any way infringing Lotus' copyrights in Lotus 1-2-3, including plaintiff's exclusive right to prepare works derived from the copyrighted work.

2. Under the authority of 17 U.S.C. Section 518, for an Order requiring the impounding and destruction of all of defendant's products or goods that infringe any of plaintiff's copyrights, including plaintiff's exclusive right to prepare works derived from the copyrighted work.

3. For an Order awarding plaintiff actual damages incurred as the result of defendant's acts of infringement and/or an accounting to plaintiff by defendant of any profits, gains and advantages derived by it from its infringing activities, or in the alternative awarding plaintiff the maximum statutory damages for each act of infringement committed by defendant;

4. Under the authority of 17 U.S.C. Section 505, for an Order awarding plaintiff its attorney's fees incurred in this action;

5. For costs of suit incurred in this action; and

6. For such other and further relief as this Court may deem proper.

Dated: January 14, 1993

O'SULLIVAN GRAEV & KARABELL

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UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

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Civil Action No. 90-11662-K

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LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.

*Defendant.*

---

ANSWER TO SUPPLEMENTAL COMPLAINT

Defendant Borland International, Inc. ("Borland") answers the Supplemental Complaint of plaintiff Lotus Development Corporation ("Lotus") as follows:

1. Borland admits that, beginning in late 1990, Borland has sold and distributed products marketed as "Quattro Pro 2.0", "Quattro Pro 3.0", "Quattro Pro 4.0", "Quattro Pro SE", "Quattro Pro 4.01" and "Quattro Pro for Windows", each of which contains a feature known as the "Macro Key Reader" or "Key Reader". Except as expressly admitted herein, Borland denies each and every allegation in paragraph 1.

2. Borland denies each and every allegations contained in paragraph 2.

3. Borland admits that Quattro Pro 4.01 and Quattro Pro for Windows were both first sold and distributed following this Court's July 31, 1992 decision in this action. Except as expressly admitted herein, Borland denies each and every allegation contained in paragraph 3.

4. Borland denies each and every allegation contained in paragraph 4.

5. Borland denies each and every allegation contained in paragraph 5.

6. Borland denies each and every allegation contained in paragraph 6.

7. Borland denies each and every allegation contained in paragraph 7.

FIRST AFFIRMATIVE DEFENSE

Lotus does not have a valid copyright in the Lotus 1-2-3 menu command hierarchy, macro language and keystroke sequences as alleged in the Supplemental Complaint, at least to the extent Lotus alleges Borland has copied, published, distributed, marketed, or placed in interstate commerce any such features; nor can Lotus obtain a valid copyright therein, because the Lotus 1-2-3 menu command hierarchy, macro language and keystroke sequences constitute uncopyrightable subject matter.

SECOND AFFIRMATIVE DEFENSE

Lotus does not have a valid copyright in the Lotus 1-2-3 menu command hierarchy, macro language and keystroke sequences as alleged in the Supplemental Complaint, at least to the extent Lotus alleges Borland has copied, published, distributed, marketed, or placed in interstate commerce any such features; nor can Lotus obtain a copyright therein, because such features lack originality.

THIRD AFFIRMATIVE DEFENSE

Lotus' claims are barred in whole or in part by the doctrine of laches, particularly with respect to the Key Reader. Bor-

land has manufactured, used, and sold the Key Reader feature in its Quattro Pro products for a substantial period of time. Despite its knowledge of such activities, Lotus failed to assert the claims raised in the Complaint within a reasonable period of time. Borland relied upon this failure by Lotus and would be prejudiced were Lotus now permitted to belatedly assert the claims contained in its Supplemental Complaint.

#### FOURTH AFFIRMATIVE DEFENSE

Lotus' claims are barred in whole or in part by the doctrine of estoppel, particularly with respect to the Key Reader.

#### FIFTH AFFIRMATIVE DEFENSE

Lotus' claims are barred in whole or in part by the doctrine of waiver, particularly with respect to the Key Reader.

#### SIXTH AFFIRMATIVE DEFENSE

To the extent, if any, Lotus has a valid copyright in the Lotus 1-2-3 menu command hierarchy, macro language and keystroke sequences as alleged in the Supplemental Complaint, Borland's use thereof constitutes a fair use as allowed for in 17 U.S.C. §107.

WHEREFORE, defendant Borland International, Inc. prays for judgment as follows:

A. That the relief requested by Lotus be denied and that the Supplemental Complaint be dismissed with costs and attorneys' fees to defendant;

B. That such other and further relief be granted as the Court deems just and proper.

Dated: January \_\_, 1993

By: GARY L. REBACK

Gary L. Reback

WILSON, SONSINI, GOODRICH  
& ROSATI

Professional Corporation

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Telephone: (617) 261-9890

Attorneys for Defendant BORLAND  
INTERNATIONAL, INC.



UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

---

Civil Action No.  
90-11662-K

---

FILED IN OPEN COURT  
Date: 2/3/93  
Lowrie Deputy Clerk

---

LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.,

*Defendant.*

---

STIPULATION AND ORDER REGULATING TRIAL

Plaintiff Lotus Development Corporation ("Lotus") and defendant Borland International, Inc. ("Borland") hereby agree as follows:

1. *Scope.* This Stipulation and Order is to govern the trial of all issues not previously finally decided by way of summary judgment concerning Borland's alleged liability herein, and all its defenses thereto, *excluding* the issues raised by Lotus' Supplemental Complaint concerning the "Key Reader" feature (the "Phase I Trial"). The parties' waivers of their respective rights to trial by jury are as set forth on page 63 of the January 14, 1993 hearing transcript.

2. The parties have entered into a stipulation concerning the "long prompts" in the parties' respective products (a copy of which is annexed hereto as Exhibit A), the terms of which are incorporated herein by reference.

3. The parties hereby consent to the introduction of designated affidavits, declarations or deposition testimony from this action or *Lotus Development Corp. v. Paperback Software International*, 87-0076-K (D.Mass.), at the Phase I Trial, in lieu of oral, direct examination, as if it were given live in Court herein.

4. The parties expressly waive any right to adverse direct examination, cross-examination or curative direct examination in Court of any witness, including those whose testimony is introduced by either party pursuant to the preceding paragraph. The parties have made their final designation of testimony and other proof, unless otherwise ordered by the Court.

5. The parties agree to withdraw any objection to the introduction of evidence on the ground of relevance that is based upon an asserted violation of the Order Regulating Jury Trial, entered September 30, 1992, but reserve the right to argue that any such evidence should be given no weight by the Court as trier of fact in reaching its determinations herein.

6. Each party agrees not to assert any objection to the other party's counter-designations of deposition testimony pursuant to Rule 32(a)(4), Fed. R. Civ. P., on the ground that the counter-designation is unnecessary to make the designated excerpt complete and not misleading.

7. The parties agree to a schedule for resolving any issue raised by Lotus' Supplemental Complaint as set forth in the agreement annexed hereto as Exhibit B. The parties further agree to attempt in good faith to agree upon a procedure for the resolution of disputed facts, if any, pertinent to determination of such issues, including, but not limited to, a procedure comparable to that set forth herein.

Dated: February 2, 1993

WILSON, SONSINI, GOODRICH  
& ROSATIBy: GARY L. REBACK  
Gary L. RebackTwo Palo Alto Square  
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(415) 493-9300DONNELLY, CONROY & GELHAAR  
176 Federal Street  
Boston, MA 02110Attorneys for Defendant  
Borland International, Inc.

SO ORDERED:

ROBERT E. KEETON  
Robert E. Keeton, U.S.D.J.O'SULLIVAN GRAEV  
& KARABELLBy: HENRY B. GUTMAN  
Henry B. Gutman30 Rockefeller Plaza  
New York, NY 10112  
(212) 408-2400HALE AND DORR  
60 State Street  
Boston, MA 02109Attorneys for Plaintiff  
Lotus Development  
Corporation

Date: 2/3/93

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTSCivil Action No.  
90-11662-K

FILED IN OPEN COURT

Date: 2/2/93  
Lowrie Deputy Clerk

LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.,

*Defendant.*STIPULATION AND ORDER REGULATING TRIAL

Plaintiff Lotus Development Corporation ("Lotus") and defendant Borland International, Inc. ("Borland") hereby agree as follows:

1. *Scope.* This Stipulation and Order is to govern the trial of all issues not previously finally decided by way of summary judgment concerning Borland's alleged liability herein, and all its defenses thereto, *excluding* the issues raised by Lotus' Supplemental Complaint concerning the "Key Reader" feature (the "Phase I Trial"). The parties, ~~have waived any~~ [waiver of their respective] right[s] to trial by jury ~~of all issues herein other than damages.~~ [are as set forth on page 63 of the January 14, 1993 hearing transcript.]

2. The parties have entered into a stipulation concerning the "long prompts" in the parties' respective products (a copy of which is annexed hereto as Exhibit A), the terms of which are incorporated herein by reference.

3. The parties hereby consent to the introduction of [designated] affidavits, declarations or deposition testimony from this action or *Lotus Development Corp. v. Paperback Software International*, 87-0076-K (D.Mass.), at the Phase I Trial, in lieu of oral, direct examination, as if it were given live in Court herein.

4. The parties expressly waive any right to adverse direct examination, cross-examination or curative direct examination in Court of any witness, including those whose testimony is introduced by either party pursuant to the preceding paragraph. The parties have made their final designation of testimony and other proof, unless otherwise ordered by the Court.

5. The parties agree to withdraw any objection to the introduction of evidence on the ground of relevance that is based upon an asserted violation of the Order Regulating Jury Trial, entered September 30, 1992, but reserve the right to argue that any such evidence should be given no weight by the Court as trier of fact in reaching its determinations herein.

6. Each party agrees not to assert any objection to the other party's counter-designations of deposition testimony pursuant to Rule 32(a)(4), Fed. R. Civ. P., on the ground that the counter-designation is unnecessary to make the designated excerpt complete and not misleading.

7. The parties agree to a schedule for resolving any issue raised by Lotus' Supplemental Complaint as set forth in the agreement annexed hereto as Exhibit B. The parties further agree to attempt in good faith to agree upon a procedure for the resolution of disputed facts, if any, pertinent to determination of such issues, including, but not limited to, a procedure comparable to that set forth herein.

Dated: February 2, 1993

WILSON, SONSINI, GOODRICH  
& ROSATI

By: GARY L. REBACK  
Gary L. Reback

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Attorneys for Plaintiff  
Lotus Development  
Corporation

SO ORDERED:

ROBERT E. KEETON  
Robert E. Keeton, U.S.D.J.

Date: 2/2/93



UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

Civil Action No.  
90-11662-K

FILED IN OPEN COURT  
Date: 2/2/93  
Lowrie Deputy Clerk

LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.,

*Defendant.*

IT IS HEREBY STIPULATED AND AGREED, by and between the undersigned counsel for plaintiff Lotus Development Corporation ("Lotus") and defendant Borland International, Inc. ("Borland"), that:

1. The order of display of the long prompts within the "123-compatible" modes of Quattro and Quattro Pro follows the order of display of the menu commands within those modes, and each such long prompt provides a short textual description of the command to which it relates.

2. Lotus shall not contend, in this action or any appeal therefrom, that Borland has copied the long prompts of Lotus 1-2-3 in ~~any version of~~ Quattro or Quattro Pro ~~published to date.~~

3. Borland shall not contend, in this action or any appeal therefrom, that Borland has not copied the long prompts of Lotus 1-2-3 in ~~any version of~~ Quattro or Quattro Pro ~~published to date.~~

4. Neither party shall contend, in this action or any appeal therefrom, that the issue of whether or not Borland copied the long prompts of Lotus 1-2-3 in either Quattro or Quattro Pro is material to any other issue that has been or will be resolved in this case.

5. Nothing herein shall prevent either party from making reference to the stipulations set forth above, or to any findings of fact and conclusions of law that have been or will be reached by the Court concerning whether the menu commands, menu command structure, keystroke sequences and/or macro language of Lotus 1-2-3 have been copied in the "123-compatible" modes of Quattro and Quattro Pro.

Dated: February 2, 1993

WILSON, SONSINI, GOODRICH  
& ROSATI

O'SULLIVAN GRAEV  
& KARABELL

By: GARY L. REBACK  
Gary L. Reback

By: HENRY B. GUTMAN  
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Attorneys for Defendant  
Borland International, Inc.

Attorneys for Plaintiff  
Lotus Development  
Corporation

SO ORDERED:

ROBERT E. KEETON  
Robert E. Keeton, U.S.D.J.

Date: 2/2/93

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

---

Civil Action No.  
90-11662-K

---

LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.,

*Defendant.*

---

IT IS HEREBY STIPULATED AND AGREED, by and between the undersigned counsel for plaintiff Lotus Development Corporation ("Lotus") and defendant Borland International, Inc. ("Borland") that:

1. The deposition of Robert Kohn on subjects relating to his Supplemental Declaration, dated January 25, 1993, shall take place on February 10, 1993. Lotus shall notify Borland by February 5, 1993 if it intends to take this deposition. Lotus shall have the right to request one additional deposition during this time period, and Borland reserves the right to object to this request for deposition.

2. Lotus' memorandum regarding issues relating to the Key Reader shall be served on February 19, 1993. This memorandum may be accompanied by up to three Declarations (the "New Lotus Declarants") (not counting declarations of counsel presenting exhibits).

3. Borland shall have the opportunity to take the deposition of any New Lotus Declarant on February 25 and 26, 1993 (subject to the witnesses' availability), or as soon thereafter as practical.

4. Borland's memorandum in response to Lotus' memorandum shall be served on March 8, 1993, and may be accompanied by a single expert declaration responding to any expert declaration submitted by Lotus. Other than such an expert declaration (if Lotus first files an expert declaration) and any designations from the depositions of any New Lotus Declarants, Borland's evidentiary submissions are complete. Lotus may depose Borland's declarant on March 15, 1993 (subject to the witnesses' availability), or as soon thereafter as practical.

5. Lotus shall designate any portions of the transcript of the deposition referred to in paragraph 4 hereof it wishes to offer in evidence within two days of receipt of that transcript.

6. The parties shall jointly request the Court to schedule promptly thereafter a nonjury trial to resolve disputed issues of fact, if any, or an oral argument if the parties agree, or the Court determines, that no such issues exist.

7. Executing this stipulation does not constitute a waiver by either party of any right to present live testimony at any trial of the issues raised by the supplemental complaint.

8. The parties agree in good faith to negotiate and agree upon a factual stipulation concerning the Key Reader portion of the "QPW.EXE" file in the Quattro Pro for Windows product in lieu of disclosure thereof by Borland.

9. Both parties reserve the right to request the Court to modify the terms of this Stipulation for good cause shown.

Dated: February 2, 1993

WILSON, SONSINI, GOODRICH  
& ROSATI

By: GARY L. REBACK  
Gary L. Reback

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O'SULLIVAN GRAEV  
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Boston, MA 02109

Attorneys for Plaintiff  
Lotus Development  
Corporation

SO ORDERED:

ROBERT E. KEETON  
Robert E. Keeton, U.S.D.J.

Date: 2/3/93

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

Civil Action No.  
90-11662-K

LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.,

*Defendant.*

IT IS HEREBY STIPULATED AND AGREED, by and between the undersigned counsel for plaintiff Lotus Development Corporation ("Lotus") and defendant Borland International, Inc. ("Borland"), that:

1. The order of display of the long prompts within the "123-compatible" modes of Quattro and Quattro Pro follows the order of display of the menu commands within those modes, and each such long prompt provides a short textual description of the command to which it relates.

2. Lotus shall not contend, in this action or any appeal therefrom, that Borland has copied the long prompts of Lotus 1-2-3 in Quattro or Quattro Pro.

3. Borland shall not contend, in this action or any appeal therefrom, that Borland has not copied the long prompts of Lotus 1-2-3 in Quattro or Quattro Pro.

4. Neither party shall contend, in this action or any appeal therefrom, that the issue of whether or not Borland copied the long prompts of Lotus 1-2-3 in either Quattro or Quattro Pro



is material to any other issue that has been or will be resolved in this case.

5. Nothing herein shall prevent either party from making reference to the stipulations set forth above, or to any findings of fact and conclusions of law that have been or will be reached by the Court concerning whether the menu commands, menu command structure, keystroke sequences and/or macro language of Lotus 1-2-3 have been copied in the "123-compatible" modes of Quattro and Quattro Pro.

Dated: February 2, 1993

WILSON, SONSINI, GOODRICH  
& ROSATI

By: GARY L. REBACK  
Gary L. Reback

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Attorneys for Plaintiff  
Lotus Development  
Corporation

SO ORDERED:

ROBERT E. KEETON  
Robert E. Keeton, U.S.D.J.

Date: 2/3/93

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

Civil Action No.  
90-11662-K

LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.,

*Defendant.*

STIPULATION AND ORDER REGULATING TRIAL

Plaintiff Lotus Development Corporation ("Lotus") and defendant Borland International, Inc. ("Borland") hereby agree as follows:

1. *Scope.* This Stipulation and Order is to govern the trial of all issues not previously finally decided by way of summary judgment concerning Borland's alleged liability herein, and all its defenses thereto, *excluding* the issues raised by Lotus' Supplemental Complaint concerning the "Key Reader" feature (the "Phase I Trial"). The parties' waivers of their respective rights to trial by jury are as set forth on page 63 of the January 14, 1993 hearing transcript.

2. The parties have entered into a stipulation concerning the "long prompts" in the parties' respective products (a copy of which is annexed hereto as Exhibit A), the terms of which are incorporated herein by reference.

3. The parties hereby consent to the introduction of designated affidavits, declarations or deposition testimony from this action or *Lotus Development Corp. v. Paperback Software International*, 87-0076-K (D.Mass.), at the Phase I Trial, in lieu of oral, direct examination, as if it were given live in Court herein.

4. The parties expressly waive any right to adverse direct examination, cross-examination or curative direct examination in Court of any witness, including those whose testimony is introduced by either party pursuant to the preceding paragraph. The parties have made their final designation of testimony and other proof, unless otherwise ordered by the Court.

5. The parties agree to withdraw any objection to the introduction of evidence on the ground of relevance that is based upon an asserted violation of the Order Regulating Jury Trial, entered September 30, 1992, but reserve the right to argue that any such evidence should be given no weight by the Court as trier of fact in reaching its determinations herein.

6. Each party agrees not to assert any objection to the other party's counter-designations of deposition testimony pursuant to Rule 32(a)(4), Fed. R. Civ. P., on the ground that the counter-designation is unnecessary to make the designated excerpt complete and not misleading.

7. The parties agree to a schedule for resolving any issue raised by Lotus' Supplemental Complaint as set forth in the agreement annexed hereto as Exhibit B. The parties further agree to attempt in good faith to agree upon a procedure for the resolution of disputed facts, if any, pertinent to determination of such issues, including, but not limited to, a procedure comparable to that set forth herein.

Dated: February 2, 1993

WILSON, SONSINI, GOODRICH  
& ROSATI

By: GARY L. REBACK  
Gary L. Reback

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Attorneys for Defendant  
Borland International, Inc.

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New York, NY 10112  
(212) 408-2400

HALE AND DORR  
60 State Street  
Boston, MA 02109

Attorneys for Plaintiff  
Lotus Development  
Corporation

SO ORDERED:

\_\_\_\_\_  
Robert E. Keeton, U.S.D.J.

Date: \_\_\_\_\_

J.A. 56

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

Civil Action No.  
90-11662-K

LOTUS DEVELOPMENT CORPORATION,  
*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.  
*Defendant.*

BORLAND'S MOTION TO AMEND  
ORIGINAL ANSWER

Defendant Borland International, Inc. ("Borland") hereby moves, pursuant to Fed. R. Civ. P. 15(a), for leave to file an amended answer (attached hereto as Exhibit A) that includes the affirmative defense of fair use. In the alternative, Borland moves, pursuant to Fed. R. Civ. P. 15(b), for permission to file an amended answer to conform to the evidence submitted at trial.

As set forth in the accompanying memorandum, Borland makes this motion on the grounds that its affirmative defense of fair use is based upon case authority that was promulgated very recently, and on the grounds that plaintiff Lotus Development Corporation ("Lotus") is not prejudiced by the assertion of the defense at this time.

Borland requests that this Court grant Borland leave to file an amended complaint and grant such further relief as the Court may deem appropriate.

J.A. 57

REQUEST FOR ORAL ARGUMENT

Borland respectfully requests that a hearing on this motion pursuant to Local Rule 7.1(c) be held at the start of the upcoming phase of trial.

Dated: February 25, 1993

WILSON, SONSINI GOODRICH  
& ROSATI

By PETER N. DETKIN  
Peter N. Detkin

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Palo Alto, California 94306  
(415) 493-9300

Peter E. Gelhaar  
DONELLY, CONROY, & GELHAAR  
176 Federal Street  
Boston, MA 02110  
(617) 261-9890

Attorneys for Defendant  
BORLAND INTERNATIONAL, INC.

CERTIFICATE OF SERVICE

I hereby certify that the foregoing Motion and the Memorandum of Points and Authorities in Support of this Motion were served by overnight courier on counsel of record for Lotus Development Corp. on February 27, 1993.

[ILLEGIBLE]



UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

---

Civil Action No.  
90-11662-K

---

LOTUS DEVELOPMENT CORPORATION,  
*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.  
*Defendant.*

---

AMENDED ANSWER AND DEMAND FOR JURY TRIAL

Defendant Borland International, Inc. ("Borland") answers the complaint of Lotus Development Corporation ("Lotus") as follows:

FIRST DEFENSE

1. Borland admits that plaintiff purports to bring an action for copyright infringement arising out of Borland's sale of computer software programs called "Quattro" and "Quattro Pro." Except as expressly admitted herein, Borland denies each and every allegation contained in paragraph 1.

2. Borland admits that the Court has subject matter jurisdiction as conferred by 28 U.S.C. §§1331 and 1338. Borland denies each and every other allegation contained in paragraph 2.

3. Borland admits that it is doing business in this judicial district. Borland denies that venue is proper in this Court. Borland is without knowledge or information sufficient to form a belief as to the truth of the remaining allegations in paragraph 3.

4. Borland admits that Lotus is a corporation organized and existing under the laws of the State of Delaware, with its principal place of business in Cambridge, Massachusetts. Borland is without knowledge or information sufficient to form a belief as to the truth of the remaining allegations in paragraph 4.

5. Borland admits that its principal place of business is at 1800 Green Hills Road, Scotts Valley, Santa Cruz County, California. Borland further admits that it is engaged in the business of marketing and distributing personal computer programming language and application software programs on a nationwide basis, including within the District of Massachusetts. Borland denies the remaining allegations contained in paragraph 5.

6. Borland admits that there is a computer software program entitled "Lotus 1-2-3;" that Lotus 1-2-3 provides users of certain computers with the ability to perform certain computer-assisted tasks including the accumulation, arrangement, and calculation of data and text in what is known as a spreadsheet format; that Lotus 1-2-3 also contains certain database storage and management and graphics presentation capabilities; and that Lotus 1-2-3 is sold as part of a package which includes user instruction manuals and other documentation. Borland is without knowledge or information sufficient to form a belief as to the truth of the remaining allegations in paragraph 6.

7. Borland admits that users of Lotus 1-2-3 communicate with Lotus 1-2-3 by various means. Borland is without knowledge or information sufficient to form a belief as to the truth of the remaining allegations in paragraph 7.

8. Borland denies that Lotus 1-2-3 is copyrightable subject matter under the laws of the United States, at least to the extent apparently claimed by Lotus for the purposes of the present action. Borland is without knowledge or information sufficient to form a belief as to the truth of the remaining allegations in paragraph 8.

9-15. Borland is without knowledge or information sufficient to form a belief as to the truth of the allegations within paragraphs 9, 10, 11, 12, 13, 14, and 15.

16. Borland denies each and every allegation contained in paragraph 16.

17. Borland admits that Quattro offers users the capability to create an unlimited number of alternative commands and offers several examples of command alternatives, and that Exhibit A to the Complaint is a copy of a chart that at certain times has been included in the Quattro "Reference Guide" provided with the Quattro program. Borland denies each and every other allegation contained in paragraph 17.

18-26. Borland denies each and every allegation contained in paragraphs 18, 19, 20, 21, 22, 23, 24, 25, and 26.

27. Borland admits that Lotus has made various statements regarding its copyright positions at various times. Borland denies each and every other allegation contained in paragraph 27.

28-29. Borland denies each and every allegation contained in paragraphs 28 and 29.

### SECOND DEFENSE

Lotus has failed to state a claim upon which relief can be granted.

### THIRD DEFENSE

Lotus does not have a valid copyright in the Lotus 1-2-3 menu structure and commands as alleged in the Complaint, at least to the extent Lotus alleges Borland has copied, published, distributed, marketed, or placed in interstate commerce any such features; nor can Lotus obtain a valid copyright therein, because the Lotus 1-2-3 menu structure and commands constitute uncopyrightable subject matter.

### FOURTH DEFENSE

Lotus does not have a valid copyright in the Lotus 1-2-3 menu structure and commands as alleged in the Complaint, at least to the extent Lotus alleges Borland has copied, published, distributed, marketed, or placed in interstate commerce any such features; nor can Lotus obtain a copyright therein, because such features lack originality.

### FIFTH DEFENSE

Lotus' claims are barred in whole or in part by the doctrine of laches. Borland has manufactured, used, and sold its Quattro products for a substantial period of time. Despite its knowledge of such activities, Lotus failed to assert the claims raised in the Complaint within a reasonable period of time. Borland relied upon this failure by Lotus and would be prejudiced were Lotus permitted now belatedly to assert the claims contained in its Complaint.

### SIXTH DEFENSE

Lotus' claims are barred in whole or in part by the doctrine of estoppel.

SEVENTH DEFENSE

Lotus' claims are barred in whole or in part by the doctrine of waiver.

EIGHTH DEFENSE

Borland has not copied, published, distributed, marketed, or placed in interstate commerce any computer software program which infringes upon or violates any rights of Lotus, including any rights that might exist under copyright.

NINTH DEFENSE

To the extent, if any, Lotus has a valid copyright in the Lotus 1-2-3 menu command hierarchy, macro language, and keystroke sequences, Borland's use thereof constitutes a fair use as allowed for in 17 U.S.C. § 107.

WHEREFORE, defendant Borland International, Inc. prays for judgment as follows:

A. That the relief requested by Lotus be denied and that the Complaint be dismissed with costs and attorneys' fees to defendant;

B. That such other and further relief be granted as the Court deems just and proper.

JURY DEMAND

Pursuant to Fed. R. Civ. P. 38(b), defendant hereby demands a trial by jury of all issues so triable.

Dated: February \_\_, 1993

WILSON, SONSINI, GOODRICH  
& ROSATI

By: \_\_\_\_\_

Gary L. Reback  
Two Palo Alto Square  
Palo Alto, California 94306  
(415) 493-9300

Peter E. Gelhaar  
DONELLY, CONROY, & GELHAAR  
176 Federal Street  
Boston, MA 02110  
(617) 261-9890

Attorneys for Defendant  
BORLAND INTERNATIONAL, INC.

CERTIFICATE OF SERVICE

I hereby certify that the foregoing Amended Answer and Demand For Jury Trial were served by overnight courier on counsel of record for Lotus Development Corp. on February \_\_, 1993.

\_\_\_\_\_  
Attorneys for Defendant  
BORLAND INTERNATIONAL, INC.



UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

Civil Action No. 90-11662-K

---

LOTUS DEVELOPMENT CORPORATION,  
Plaintiff,

—against—

BORLAND INTERNATIONAL, INC.,  
Defendant.

---

NOTICE OF FILING OF TRIAL RECORD

Plaintiff Lotus Development Corporation ("Lotus") and defendant Borland International, Inc. ("Borland") have filed, concurrently herewith, the following evidentiary and other materials pertinent to the Phase I and Phase II Trials in this matter, held on February 1-3 and March 31-April 2, 1993, respectively:

I: *TRIAL BINDERS*

Two boxes containing 9 binders of material proffered and referred to at the Phase I and Phase II Trials, marked to indicate the party designating the material, together with objections thereto and rulings thereon:

- Volume I, II and III—Deposition Testimony
- Volume IV—Exhibits
- Volume V—Lotus' Declarations
- Volume VI—Borland's Declarations
- Volume VII—Discovery Responses

Volume VIII—Pleadings and Transcripts  
Volume IX (red)—Confidential Portion of Phase I and Phase II Trial Record

II: *OVERSIZED EXHIBITS*

Two boxes containing certain exhibits not included in the Trial Binders due to their size or nature, as indicated therein:

Lotus 1-2-3, Release 2.0 (software program) (Plaintiff's Exhibit 2)

*PC Magazine*, May 26, 1987 (Plaintiff's Exhibit 28)

Dybvig, Philip H., *The Lotus Tutorial* (The Scientific Press 1989) (Plaintiff's Exhibit 36)

McComb, Gordon, *Lotus 1-2-3 and the IBM PC or XT* (New American Library 1989) (Plaintiff's Exhibit 38)

Demonstration Disk containing files used by Larry Roshfeld in Lotus demonstration on March 31, 1993 (Plaintiff's Exhibit 49)

Product Packaging for Quattro Pro 2.0, Quattro Pro 3.0, Quattro Pro 4.0, Quattro Pro 4.01 and Quattro Pro for Windows (Plaintiff's Exhibit 50)

Portion of videotape submitted by Borland in connection with cross-motion for summary judgment on September 28, 1991 (Defendant's Exhibit 523)

Aho, Alfred, et al., *Compilers, Principles, Techniques and Tools* (Addison-Wesley 1988) (Defendant's Proposed Exhibit 506)

III: *SOFTWARE DOCUMENTATION*

Boxes containing documentation (i.e., user's manuals) for the following computer software products included in the "Software Library" to be filed concurrently herewith:

Lotus 1-2-3, Release 1A  
(Plaintiff's Exhibit 1)

Lotus 1-2-3, Release 2.01  
(Plaintiff's Exhibit 3)

Symphony, Release 2.0  
(Plaintiff's Exhibit 24)

Improv (Plaintiff's Exhibit 27)

Quattro (Plaintiff's Exhibit 4)

Quattro Pro 1.0 (Plaintiff's Exhibit 5)

Quattro Pro 2.0 (Plaintiff's Exhibit 6)

Quattro Pro 3.0 (Plaintiff's Exhibit 7)

Quattro Pro 4.0 (Plaintiff's Exhibit 8)

Quattro Pro 4.01 (part of Plaintiff's Exhibit 35;  
also Defendant's Exhibit 522)

Quattro Pro for Windows (part of Plaintiff's  
Exhibit 35; also Defendant's Exhibit 518)

Quattro Pro SE (Defendant's Exhibit 516)

Microsoft Excel, Version 2.1 (Reference Guide  
only) (Plaintiff's Exhibit 20)

Microsoft Excel, Version 3.0 (Defendant's  
Exhibit 519)

Microsoft Excel, Version 4.0 (Defendant's  
Exhibit 520)

Microsoft MultiPlan, Version 4.0 (Plaintiff's  
Exhibit 21)

Framework XE for DOS (Executive Edition)  
(Plaintiff's Exhibit 22)

SuperCalc 3 (Plaintiff's Exhibit 23)\*

SuperCalc 5 (Defendant's Exhibit 521)

MathPlan 2.1 (Plaintiff's Exhibit 25)

PFS Professional Plan Version 1.0  
(Plaintiff's Exhibit 26)

\* Plaintiff's Exhibit 23 consists of the SuperCalc 4 software program, which is included in the "Software Library" to be filed concurrently herewith. Lotus is endeavoring to locate the SuperCalc 4 documentation and will substitute it for this item, if possible.

Dated: May 4, 1993

Respectfully submitted,

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Lotus Development  
Corporation

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

Civil Action No. 90-11662-K

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LOTUS DEVELOPMENT CORPORATION,  
Plaintiff,  
  
—against—  
  
BORLAND INTERNATIONAL, INC.,  
Defendant.

---

NOTICE OF FILING OF "SOFTWARE LIBRARY"

Plaintiff Lotus Development Corporation ("Lotus") and defendant Borland International, Inc. ("Borland") have filed, concurrently herewith, the following computer software programs proffered in evidence and referred to in the Phase I and Phase II Trials in this matter, held on February 1-3 and March 31-April 2, respectively:

Lotus 1-2-3, Release 1A (Plaintiff's Exhibit 1)  
Lotus 1-2-3, Release 2.01 (Plaintiff's Exhibit 3)  
Symphony, Release 2.0 (Plaintiff's Exhibit 24)  
Improv (Plaintiff's Exhibit 27)  
Quattro (Plaintiff's Exhibit 4)  
Quattro Pro 1.0 (Plaintiff's Exhibit 5)  
Quattro Pro 2.0 (Plaintiff's Exhibit 6)  
Quattro Pro 3.0 (Plaintiff's Exhibit 7)

Quattro Pro 4.0 (Plaintiff's Exhibit 8)  
Quattro Pro 4.01 (part of Plaintiff's Exhibit 35; also Defendant's Exhibit 522)  
Quattro Pro for Windows (part of Plaintiff's Exhibit 35; also Defendant's Exhibit 518)  
Quattro Pro SE (Defendant's Exhibit 516)  
Microsoft Excel, Version 2.1 (Plaintiff's Exhibit 20)  
Microsoft Excel, Version 3.0 (Defendant's Exhibit 519)  
Microsoft Excel, Version 4.0 (Defendant's Exhibit 520)  
Microsoft MultiPlan, Version 4.0 (Plaintiff's Exhibit 21)  
Framework XE for DOS (Executive Edition) (Plaintiff's Exhibit 22)  
SuperCalc 4 (Plaintiff's Exhibit 23)  
SuperCalc 5 (Defendant's Exhibit 521)  
MathPlan 2.1 (Plaintiff's Exhibit 25)  
PFS Professional Plan Version 1.0 (Plaintiff's Exhibit 26)

For the Court's convenience, the programs contained in the "Software Library" have been previously installed by the parties on a computer running the Microsoft Windows operating environment software. Selection of the appropriate icon from the pre-installed menu will provide access to the indicated program.

For technical reasons, the Lotus 1-2-3, Release 2.0 software program (Plaintiff's Exhibit 2) could not be installed on this computer's hard drive. The disks for that program are contained in the product package, which is included in the box of



"Oversized Exhibits" to be filed concurrently herewith. If the Court wishes, the parties will be happy to assist with the installation necessary to review that program.

Dated: May 4, 1993

Respectfully submitted,

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GOODRICH & ROSATI

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KARABELL

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UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

---

CIVIL ACTION  
No. 87-76-K

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LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

vs.

PAPERBACK SOFTWARE INTERNATIONAL  
and STEPHENSON SOFTWARE, LTD.,

*Defendants.*

---

CIVIL NONJURY TRIAL

TWELFTH DAY—FINAL ARGUMENTS

BEFORE THE HONORABLE ROBERT E. KEETON  
United States District Judge

Courtroom 11  
U.S.P.O. & Courthouse  
Boston, Massachusetts  
Thursday, March 22, 1990

Nancy L. Eaton, Reporter Computer-Aided Transcription  
13 Short Street, Reading, MA 01867 (617) 944-7182

**[Volume 12, Page 71]**

is free for everybody to use. You just can't copy the compiler. That's protectable and that's certainly protectable by copyright. You have to have your own.

What they did here is they copied our compiler. Excel uses our macros. Your Honor saw it. But they did it by coming up with their own—well, they didn't do a compiler. They did a converter or translator instead. It is a different technique. They did it without copying. They have their own macro language. They didn't copy ours and they can read or use our macros by means of their converter, just as someone could with two different BASIC compilers or two different C compilers; so the analogy to a programming language doesn't help them and doesn't hurt us. All we're seeking there is to protect what anybody else could protect, even in a programming language, and what their own witness admitted is protected.

I would also just to clear up one point in this area that may have been confused during the trial. We don't claim that the macros people create belong to us. That's theirs. That's their property. Somebody writes a macro using Lotus 1-2-3, there is no question that that macro belongs to the user.

Now, there are a lot of references, your Honor, to buttons, levers, watches. Last night I reread Mr. Gupta's opening and I recalled the poignant moment when he

\* \* \*

**[Volume 12, Page 73]**

there is nothing original there. His was one of those Japanese digital type that had the numbers there with the colon between them. There is no originality in that user interface.

If the face of that watch had had Spirew Agnew's picture on it, Spirew Agnew's depiction and the hands were his hands or Mick Mouse's or Minni Mouse's hands or pick your favorite character, that's copyrightable. There are cases on those. That's easy. Even a watch user interface can be protected.

I mean there is also the point, and I heard an echo of it again this morning, that somehow there is just not—I mean that the reason we're doing this business about the classifications and we're trying to argue so hard that this is a single work is because we don't want the menus to have to be judged standing alone, that there isn't enough subject matter, there isn't enough writing there, there isn't enough words for that to be copyrightable subject matter.

And I would suggest to the Court, as we did in our brief, if you don't look at it, A, that would be wrong even if you looked at it screen by screen; B, that's not the way you look at it. You look at the work as a whole. But I brought in today a poem which my six-year old wrote for school, and if I thought about it far enough in

\* \* \*

J.A. 74

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

CIVIL ACTION  
No. 90-11662-K

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LOTUS DEVELOPMENT CORPORATION

—vs.—

BORLAND CORPORATION

---

CIVIL ACTION No.  
90-11663-K

Courtroom 11  
Boston, Massachusetts  
Tuesday, June 18, 1991

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LOTUS DEVELOPMENT CORPORATION

—vs.—

THE SANTA CRUZ OPERATION, INC.

---

J.A. 75

CONFERENCE

BEFORE THE HONORABLE ROBERT E. KEETON  
UNITED STATES DISTRICT JUDGE

TIMOTHY J. WILLETTE, RPR-CM  
Official Court Reporter  
U.S. District Court  
1201 USPO & Courthouse  
Boston, Massachusetts 02109  
(617) 248-0604



[4] THE COURT: Well, I think it makes sense to deal first with the motion for protective order and the dispute over discovery. Now, I have read your submissions on that matter and I take note of the fact that the Borland position is premised on a legal argument that I am prepared to rule is without merit.

Basically, as I understand your position, it is that copyrightability depends on patentability, and I've heard and considered that argument. I don't consider myself bound by what I ruled before if you could show me some [5] reason I made a mistake or that there's some intervening precedent, but having examined your submission, the memorandum in support of that motion to compel, most of which is on this argument, I take it that means you are premising the argument on this proposition that if you can show me that there's something patentable here that would mean there's no copyright protection. I think that is plainly error, and since that's the premise of the motion to compel and the effort to get additional discovery, I think I should simply deny the motion to compel and give you my ruling that I don't regard that matter as tending to produce the discovery of any evidence that is either admissible in this case or is likely to lead to admissible evidence.

Now, there is the additional proposition that I have also examined, the in camera submission, which of course you have not seen, but if I got over that first hurdle, I think I would still find it necessary to deny your motion to compel for reasons I'm not able to explain to you in detail at this point. But I don't really need to reach that issue, because on the first proposition — let me put it to you another way:

If you spend 90 percent of your brief on the matter arguing a legal proposition as the premise for the motion that is not sound, I take you at your representation that that's the premise of your motion and that you don't [6] have any other theory that's legally supportable for the discovery you're seeking, and so I think that's the ruling.

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

---

CIVIL ACTION  
No. 90-11662-K

---

LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

—v.—

BORLAND INTERNATIONAL, INC.,

*Defendant.*

Memorandum and Order  
March 20, 1992

In this civil action, the plaintiff, Lotus Development Corporation ("Lotus"), seeks damages and equitable relief for alleged infringement by defendant, Borland International, Inc. ("Borland"), of the Lotus copyright in its computer software program, Lotus 1-2-3. This is the same copyright for the infringement of which Lotus has obtained relief under this court's decision in *Lotus Dev. Corp. v. Paperback Software Int'l*, 740 F. Supp. 37 (D. Mass. 1990) (holding that Paperback's VP Planner was an infringing software product).

Lotus contends that on undisputed facts Borland's Quattro and Quattro Pro (herein, collectively, the "Quattro programs") are likewise infringing. Borland responds that its products are materially different from both Lotus 1-2-3 and VP Planner and that the court should determine on undisputed facts that the Quattro programs do not infringe the Lotus copyright. Borland argues that this result follows under the rules and standards of law applied

\* \* \*

## 2(a)

\* This footnote, not for publication, identifies for the parties and for the clerk's recordkeeping the submissions now before the court: (1) Lotus' Motion for Summary Judgment on Liability (Docket No. 30, filed May 10, 1991); (2) Borland's Cross-Motion for Summary Judgment on Copyrightability (Docket No. 87, filed September 30, 1991); (3) Brief Amicus Curiae on Behalf of the Register of Copyrights (Docket No. 85, filed September 30, 1991); (4) Borland's Statement of Material Facts Going to Copyrightability As to Which There Is No Genuine Issue (Docket No. 93, filed September 30, 1991); (5) Liability Questions for the Trier of Fact (Docket No. 95, filed September 30, 1991); (6) Brief Amicus Curiae of Copyright Law Professors (Docket No. 102, filed October 9, 1991); (7) Plaintiff's Memorandum of Law in Support of Motion for Summary Judgment on Liability (Redacted as of January 15, 1992) (Docket No. 147, filed January 28, 1992); (8) Statement of Material Facts As to Which There Is No Genuine Issue Pursuant to Local Rule 56.1 (Docket No. 149, filed January 28, 1992); (9) Plaintiff's Reply Memorandum in Support of Motion for Summary Judgment and in Opposition to Defendant's Cross-Motion for Summary Judgment on the Issue of Copyrightability (Docket No. 153, filed January 28, 1992); (10) Lotus' Response to Borland's Statement of Facts Going to Copyrightability As to Which There Is No Genuine Issue (Docket No. 154, filed January 28, 1992); (11) Borland's Memorandum in Support of Cross-Motion for Summary Judgment on the Issue of Copyrightability and in Opposition to Lotus' Motion for Summary Judgment (Redacted as of January 15, 1992) (Docket No. 141, filed January 30, 1992); (12) Borland's Statement of Material Facts As to Which There Is No [sic] Genuine Issue to Be Tried (Docket No. 144, filed January 30, 1992); (13) Borland's Reply Memorandum in Support of Cross-Motion for Summary Judgment on the Issue of Copyrightability and in Opposition to Lotus' Motion for Summary Judgment (Docket No. 146, filed Jan-

uary 30, 1992); (14) Brief of Amicus Curiae (of Software Entrepreneur's Forum) attached to Docket No. 59, filed June 17, 1991); (15) Plaintiff's Memorandum Regarding Issues for Jury Determination and Proposal for Phasing of Trial (Docket No. 50, filed June 7, 1991); (16) Borland's Redacted Memorandum of Law with Respect to Phasing of the Case (Docket No. 51, filed June 10, 1991); (17) Lotus' Response to Defendant Borland's Memorandum of Law with Respect to Phasing of the Case (no docket no., filed June 14, 1991); and (18) Borland's Reply Memorandum with Respect to Phasing of the Case (Docket No. 54, filed June 14, 1991). Other relevant submissions before the court include thirty-seven binders of exhibits, eight software packages, three videotapes, one magazine, numerous declarations, affidavits, and other exhibits, an evidentiary objection and response, and three motions and supporting documents relating to the preservation of confidential information.

\* \* \*



UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

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CIVIL ACTION  
No. 90-11662-K

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Courtroom 11  
Tuesday, May 19, 1992  
Boston, Massachusetts

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LOTUS DEVELOPMENT CORPORATION

vs.

BORLAND INTERNATIONAL, INC.

---

HEARING ON CROSS-MOTIONS  
FOR SUMMARY JUDGMENT

---

BEFORE THE HONORABLE ROBERT E. KEETON  
UNITED STATES DISTRICT JUDGE

---

APPEARANCES:

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Court Reporter: Timothy J. Willette, RPR-CM  
Official Court Reporter  
U.S. District Court  
P.O. Box 347  
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[3] to proceed with my argument. Let's begin with the issue that I will call copying. And just so there's no confusion, what I mean by copying is what the Court referred to as substantial similarity in the evidentiary sense, and I'll try and use that word consistently today so there's no confusion. Our view is that there are no issues of fact here concerning copying. Let's begin with the question of what are the similarities and the differences between the programs.

I don't believe there's a triable issue of fact there, your Honor, because each of those similarities and each of those differences are evident from looking at the programs. There's nothing hidden here, there's nothing that requires some kind of a probing inquiry. It's just a matter of examining the products. Now, to be sure, the parties may describe these items differently, their definitions of them may be fuzzy or vague or inconsistent, suggesting that there's an issue of fact, but if the Court examines the products, indeed I believe if one examines the record as it stands now on summary judgment, one could compile an objective list of everything that's the same and everything that's different and none of those items are genuinely in dispute. There is nothing to try there.

THE COURT: Let me ask your perspective on whether in addition to having that list for comparison, as [4] you have described it, I need to be thinking about the issue that Borland has stated repeatedly in their submissions, that your claim is not for infringement of Release 2.0 but only for an earlier version and that—maybe I'm overstating Borland's argument—if they just copied it from 2.0, that doesn't make your case under your pleadings. If they haven't put it that way, they put it so close to that that they're asking me to think of it that way, I believe. And I'll give Mr. Reback an opportunity to correct me if I'm wrong.

MR. GUTMAN: There's a short and simple answer to that, your Honor, and that is a stipulation that they signed.

THE COURT: I'm aware of that stipulation. Why does that eliminate the problem—I gather it's an argument that you might have had a claim, but you didn't make it in your complaint and you're stuck with your complaint.

MR. GUTMAN: Well, first of all, your Honor, under the law I don't believe that's so. What we have in 2.01, in Release 2.01, is something which from the perspective of the user interface is absolutely identical, absolutely identical, to 2.0. It is a derivative of 2.0, which is in turn a derivative of 1A and 1, and therefore, under the law, we don't have to sue under each of those if [5] what we're suing for them copying is something that was in the earlier version, and all of this was, and they have so stipulated.

THE COURT: Well, now, you see, that is where you are trying to explain to me some language here, copying, substantial similarity, what's the relation. What you have just said would seem obvious if we were just talking about similarities, but if we're talking about copying and similarity is simply one way of approaching evidence of copying, then how do you answer the argument that if your proof doesn't establish that they copied from the product on which your complaint is based there's a failure of your proof to match your claim?

MR. GUTMAN: Well, your Honor, 2.01 is identical to 2.0. It's like talking about the first printing and second printing of a book. Now, whether one views it as a question of copying or of substantial similarity, anything that can be said of a factual nature with respect to 2.01 can and must be said with respect to 2.0 as well. They are the same for these purposes, as Borland has stipulated.

THE COURT: What puzzles me is why you don't just ask me to allow you to amend your complaint and claim copying of 2.01 as well.

MR. GUTMAN: That's my fallback, your Honor.

[6] If we had to, obviously we would ask for leave to amend to conform to the proof.

THE COURT: Well, why don't you? Is there some other collateral consequence that you're worrying about?

MR. GUTMAN: Absolutely not, your Honor. It's simply Borland screaming about being surprised by this at the last minute, frankly their version of the story in which they say, "Oh, no, we were copying 2.01, not the identical 2.0"—

THE COURT: Is it correct that if your claim included copying from 2.01, that would not have affected the scope of discovery at all in this case, the scope of the issues?

MR. GUTMAN: Not at all, your Honor. We have in this case and in *Paperback* at every instance given full discovery with respect to 2.01, because for our purposes 2.01 and 2.0 were the same. We never drew a distinction, ever. And although they made such a claim in their brief, there is no support for that in the record, zero, and they have cited none. We produced the full discovery record concerning the development of 2.01 in the *Paperback* case, in the *Paperback* case, your Honor, and all of that discovery was provided to them here. They have never been blocked from asking questions about 2.01 here.

\* \* \*

[44] My client has asked me to clarify this and I think it is appropriate that I do so.

Mr. Gutman repeatedly said that the idea was to be like Lotus. The idea of the native mode in both Quattro and Quattro Pro was to run user files that were created under 1-2-3. That was the idea. It was also Lotus' idea with respect to version 2.01, so I just want to make sure. That is the statement that Mr. Bosworth testified to, Mr. Warfield testified to, and Ms. Joanne Lin testified to. That was what they were trying to do. That was part of the idea, as Mr. Manzi said as well. Thank you, sir.

THE COURT: All right. Now, I will take the cross-motions under advisement. I think while you're here, though, we better schedule a time for a trial since regardless of how I rule here, with one possible exception, we'll have to have further proceedings. And I remain essentially of the view that the most likely form of those proceedings would be a form of trial on either a consolidated substantial similarity and copyrightability or successive, immediate. I'm not at all attracted to the idea that we put these questions to different juries. It seems to me the argument for that that you've advanced in

this brief is neither sound from the point of view of the legal issues involved, legal and factual issues involved, nor as a practical matter for the management of the case.

\* \* \*



UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

CIVIL ACTION No. 90-11662-K

\_\_\_\_\_  
LOTUS DEVELOPMENT CORPORATION,  
*Plaintiff,*

—v.—

BORLAND INTERNATIONAL, INC.  
*Defendant.*

\_\_\_\_\_  
**ORDER REGULATING JURY TRIAL**  
SEPTEMBER 30, 1992

I.

1. This case is set for jury trial, Phase I, commencing at 9:00 a.m. on November 2, 1992 (the TRIAL DATE).

**OTHER IMPORTANT DATES:**

[ONE] WEEK before the Final Pretrial Conference/October 16, 1992, 3:30 p.m.  
See III-7(a)

Final Pretrial Conference October 16, 1992, 3:30 p.m.  
See IV

[TWO] WEEKS before the TRIAL DATE/\_\_\_\_\_, 19\_\_\_\_  
See III-8(a), III-9

[ONE] WEEK before the TRIAL DATE/\_\_\_\_\_, 19\_\_\_\_  
See III-8(b)

TWO COURT DAYS before the TRIAL DATE/\_\_\_\_\_, 19\_\_\_\_  
See I-3, III-8(b), V-1, VI-A-2,  
VI-B-1-(b), VII-A-2

TWO COURT DAYS BEFORE EACH DAY OF TRIAL  
See VII-B-1

BEFORE TRIAL COMMENCES  
See VII-D-1-(b)

DAILY DURING TRIAL  
See VII-B-5, VII-E-1

2. Unless otherwise ordered after the date this ORDER is entered, Parts II-VIII of this ORDER will apply to the trial of this case.

3. The court does not press parties to settle a case that they genuinely prefer to try. If, however, this is a case destined for settlement, it is in the mutual interest of the parties, as well as in the public interest, that it be settled before the parties incur the expenses of final preparations for trial. Under this ORDER, intensified preparations commence, at the latest, about three weeks before the TRIAL DATE. If the case is not settled by that time, the parties and counsel are expected to make good faith efforts to determine finally whether the case can be settled *not later than TWO COURT DAYS before the TRIAL DATE*. These instructions do *not* mean that the court discourages continued efforts to settle a case *after the jury has been selected*. The court recognizes that developments in trial, beginning with party assessments of the composition of the jury, may affect demands and offers. The point the court emphasizes is that a settlement that occurs in the brief period of two court days before jury selection is to commence is clear evidence that the parties and their attorneys have deferred serious efforts to settle, with insensitivity to the waste of public and private resources and to the delay and inconvenience that their deferring serious negotiations has



caused to the parties, witnesses, and attorneys in other cases, as well as to the court.

## II. Aims, Incentives, and Stipulations

1. The central aim of this Order is to create a set of procedures tailored to fit the distinctive characteristics of this case and "to secure the just, speedy, and inexpensive determination of [this] action," Fed. R. Civ. P. 1.

2. Absent planning and an explicit understanding among counsel and the court about methods of proof, interrogation, and argument that will or will not be used, each advocate has an incentive toward extremely adversary strategies and tactics. Of course, lawyers as well as judges know that extreme adversariness has its own downside risks. We also know, however, that pressures to respond in kind to contentious techniques used against you are hard to resist. Thus, when counsel expect that the court will allow excessive adversariness, the length and cost of the trial tend to increase. Distracting disputes over tangential matters interfere with the court's and the jury's understanding of material issues. The quality of the trial deteriorates.

3. When counsel and the court plan in advance to adapt trial procedures to the needs of the particular case, the trial is likely to be shorter and less expensive to the parties and to the public than it otherwise would be. Of even greater significance, the trial is likely to be better in quality. A crisp, well-focused trial helps the court and jury understand fully the material disputes of fact and law. The result is more likely to be a wise and fair decision on the merits.

4. The court encourages stipulations that will serve the aim that

"the mode and order of interrogating witnesses and presenting evidence" be such as will "(1) make the interrogation and presentation effective for the ascertainment

of truth, (2) avoid needless consumption of time, and (3) protect witnesses from harassment or undue embarrassment,"

Fed. R. Evid. 611(a). The kinds of agreements worthy of consideration include stipulations that direct testimony of some or all witnesses will be taken in narrative or affidavit form (with rights of cross-examination reserved) rather than "orally in open court" (as is the right of each party under Fed. R. Civ. P. 43(a), absent stipulation), and that evidence in affidavit form will be read to the jury by the witness, or by counsel or another reader with court approval. The court encourages counsel and the parties to consider also a stipulation for shorter time limits than those the court is likely to impose pursuant to Part III of this ORDER.

5. By entering this Order Regulating Trial, the court gives notice regarding rules of proof and procedure it expects to apply in the absence of stipulation and invites the parties to suggest modifications and additions to Parts V-VII of this ORDER that may more effectively tailor this trial to the needs of this case.

## III. Time Limits<sup>1</sup>

1. Time limits provide an incentive to make the best possible use of the limited time allowed. If the parties are not able to agree upon time limits for the trial of this case, the court will, after inviting submissions from the parties, order

<sup>1</sup> Fed. R. Evid. 102 authorizes the trial judge to act to eliminate "unjustifiable expense and delay." Fed. R. Evid. 403 recognizes the power and duty of the court to exclude cumulative evidence or other evidence that takes more time than its probative value justifies. Fed. R. Evid. 611 directs the court to "exercise reasonable control over the mode . . . of interrogating witnesses and presenting evidence" to "avoid needless consumption of time." Fed. R. Civ. P. 1 expresses the aim of "just, speedy, and inexpensive determination of every action." The court invites the help of counsel in causing this trial to measure up to the spirit as well as the letter of these rules and the many precedents implementing and underscoring them.

presumptive limits, which will be subject to modification for good cause shown. Plainly, however, the limits that the court may order will not be as stringent as those the parties might agree would serve their mutual interests in achieving a shorter, less expensive, and better quality trial.

2. Absent agreement of the parties to time limits approved by the court, the court will order a presumptive limit of a specified number of hours for this trial, to be allocated equally between opposing parties unless otherwise ordered for good cause.

3. A request for added time will be allowed only for good cause. An explicit purpose of this provision is to create an incentive for using time exclusively on issues material to disposition on the merits.

4. In determining whether to allow a motion of any party for an increased allotment of time, the court will take into account (a) whether or not that party has used the time from commencement of trial forward in a reasonable and proper way, in compliance with all orders regulating the trial, (b) the party's proffer with respect to the way in which the added time requested would be used and why it is essential to fair trial, and (c) any other facts the party may wish to present in support of the motion, if determined by the court to be material. The court will be receptive to motions for reducing or increasing allotted time to assure that allotments are fair among the parties and adequate for developing the evidence. Any party that makes only proper use of its time throughout the trial is assured that an extension will be allowed if more time is needed to present all its material and admissible evidence adequately.

5. Presumptive allotments of time to a party will be stated as a total number of hours available to that party, rather than allocations of times for particular witnesses or proceedings. Thus, each party will be free, without a showing of good cause, to allocate time as that party chooses among different uses—opening statement, direct and cross-examination of var-

ious witnesses, closing argument, objections, and motions—as long as the party's total allotment is not exceeded.

6. Time taken to argue objections will be charged against the time allocation of the party against whom the court rules, and will be allocated between parties if the court rules partly for and partly against the objecting party.

7(a). Not later than *ONE WEEK before the Final Pretrial Conference*, each party shall file a draft of the precise text of each interrogatory it proposes that the court submit to the jury.

7(b). No evidence will be received in Phase I except evidence that is material to a disputed and material issue of fact for which counsel proffering the evidence (1) has filed with the court, at least one week before the Final Pretrial Conference, a proposed interrogatory to the jury, or (2) identifies an interrogatory proposed by the opposing party to which the proffered evidence is material.

8(a). Not less than *[TWO] WEEKS before the TRIAL DATE*, each party shall serve on the opposing party and file its NOTICE OF DIRECT EXAMINATION (1) listing its witnesses and an estimate of the time to be used in direct examination of each witness, (2) listing the precise pages and lines of any deposition testimony to be offered during the case in chief, with time estimates for reading that testimony into evidence, (3) affidavits of any expert witnesses whose depositions have not been taken, fairly summarizing the substance of their expected testimony, fully disclosing every opinion to be expressed, and estimating the time of direct examination, and (4) listing all the exhibits it intends to offer and an estimate of time, if any, to be used in publishing each exhibit to the jury. If the expected content of direct examination and exhibits has not previously been disclosed, the NOTICE shall include a fair summary of the content of each direct examination and each exhibit.



8(b). *Not less than [ONE] WEEK before the TRIAL DATE*, each party (or group of parties) shall serve and file its NOTICE OF CROSS-EXAMINATION estimating time to be used in cross-examination of each of the opposing party's listed witnesses. If either party, after seeing the opposing party's NOTICE OF DIRECT-EXAMINATION, proposes to call additional witnesses or offer additional exhibits, it shall, when serving and filing its NOTICE OF CROSS-EXAMINATION, also serve and file a SUPPLEMENTAL NOTICE OF DIRECT EXAMINATION, including time estimates. An opposing party's SUPPLEMENTAL NOTICE OF CROSS-EXAMINATION shall be filed not later than TWO COURT DAYS BEFORE THE TRIAL DATE.

9. The parties are encouraged to confer and agree upon witness and exhibit lists and time limits for direct and cross-examination, and to file a stipulation *not less than TWO WEEKS before the TRIAL DATE* in lieu of the separate submissions otherwise required by paragraphs 7 and 8.

#### IV.

A final Pretrial Conference is scheduled for October 16, 1992 at 3:30 p.m.

#### V. Jury Selection

1. Not later than TWO COURT DAYS before the TRIAL DATE, the parties shall file a list of any other persons, not appearing on witness lists, who should be identified in voir dire questions to the jury. The list should be over-inclusive rather than under-inclusive in case of any doubt, in order to avoid risks of loss of jurors during trial because of acquaintance with a person whose possible relationship to the case was not made known during voir dire.

2. A jury of 8 will be selected unless the parties stipulate otherwise, with court approval.

3. It is the regular practice in this court to call a jury pool on Monday, or on Tuesday when Monday is a holiday. Jury selection in one or more other cases may be scheduled for the same TRIAL DATE. See Part VII-A-1, *infra*.

#### VI. Proposed Jury Instructions

##### A. Preliminary and Interim Instructions

1. Before testimony begins, the court will instruct the jury on the functions and roles of the jury and of counsel in the case and on the jury's obligations to decide the case solely on the evidence presented, to refrain from discussing the case (with each other or anyone else), and to avoid contact with the parties and with published or broadcast accounts of the trial.

2. The court may also give preliminary instructions *on the law applicable to the claims and defenses in this case*. The court will offer the parties an opportunity to be heard before giving preliminary instructions of this kind. Any requests of the parties for preliminary instructions shall be filed with the court *not later than TWO COURT DAYS before the TRIAL DATE*.

3. If the trial lasts longer than a week and the circumstances warrant, the court may give interim instructions from time to time to help the jury understand proceedings.

##### B. Final Jury Instructions

1. The court will give the final charge orally and ordinarily will also deliver a copy to the jury in writing. The charge will consist of four components:

(a) General Instructions: General Instructions serve as a guide to the jury throughout its deliberations. A draft of the court's proposed general instructions will be distributed in advance. Any objections or proposed amendments must have been filed on or before a date to be specified during trial.

(\_\_\_\_\_, 19\_\_\_\_.)



(b) **Special Interrogatories:** The court does not expect to ask the jury to return a general verdict. Special interrogatories request the jury's findings on specific questions of fact. Initial requests for questions to be included in the Verdict Form shall be served and filed as required in III-7(a). For good cause shown, revised requests may be served and filed *not later than TWO COURT DAYS before the TRIAL DATE*.

(c) **Explanatory Instructions on the Law:** Most of the explanatory instructions on the law bear directly upon an identified question or questions submitted in the special interrogatories on the Verdict Form. Ordinarily the court explains only those rules of law the jury needs to understand to answer the interrogatories. The court does not give, along with interrogatories, the type of instructions that are needed when the jury is to return a general verdict.

(d) **Limiting Instructions:** Limiting instructions may include instructions as to evidence received for a limited purpose or purposes, or against less than all the parties in the action. If the occasion for a limiting instruction can be anticipated, parties will be expected to have their requests prepared in advance in writing. If any evidence is received for a limited purpose, a party seeking the benefit of a limiting instruction in the court's final instructions will have the burden of assuring that a copy of the court's oral instruction is delivered to the Clerk for inclusion in the final charge, and in the case of documentary evidence, for attachment to the exhibit. A form that may be used with exhibits is attached to this order as "Exhibit A."

**C. Jury Deliberation:** Unless a stipulation to the contrary is filed, the Verdict must be unanimous. (The court encourages the parties to stipulate before jury selection that if excuses reduce the jury to a number not less than five, the remaining jurors will constitute the jury and will deliberate.)

## VII. Procedure at Trial

### A. Opening Statements

1. Opening statement by plaintiff will occur promptly after jury selection, on the TRIAL DATE, unless proceedings in another case have priority on that date.

2. Opening statement by the defendant will occur immediately after plaintiff's opening statement, unless defendant has elected otherwise by notice filed and served not later than TWO DAYS before the TRIAL DATE.

3. In a lengthy trial, the court may allow Interim Statements from time to time to enable counsel to clarify issues for the jury.

### B. Evidence

1. Each party shall give advance notice to the court and the other parties, before jury selection, of the identity of all witnesses whose testimony (by affidavit, by deposition, or by oral testimony in trial) it may offer during trial. *Not later than TWO COURT DAYS before* it seeks to use the testimony of any witness, or on shorter notice for good cause shown, it shall advise the court and all other parties of its intent to use the testimony of the witness on the specified day. Except for good cause shown, no party shall be allowed to use the testimony of a witness other than the witnesses already listed on the filings with the court before trial commences. Except for good cause shown, no party shall introduce during direct examination documentary evidence other than those exhibits already listed with the court and furnished to the other parties before trial commences. These provisions with regard to documentary evidence shall not apply to cross-examination.

2. Absent a showing of good cause, the court will not exercise its discretion under Fed. R. Evid. 611(b) to allow the subject matter of the cross-examination to extend beyond the subject matter of the direct examination and matters affecting

the credibility of the witness. A showing of good cause will also be required if the subject matter of the redirect is to be allowed to extend beyond matters covered on cross-examination. That a witness has come from a distance or will be unavailable later in the trial may be found to constitute good cause to allow a party to treat him or her as its witness during what would otherwise be cross-examination, and to extend the examination beyond the scope of direct. *Absent a showing of special cause, examination of a witness shall not proceed beyond one redirect and one re-cross.*

### 3. Use of Depositions at Trial:

Except for good cause shown no deposition testimony shall be introduced as direct examination, or during oral direct examination, other than those pages or portions thereof noted in previous filings with the court. This limitation shall not apply to the use of deposition testimony in cross-examination.

4. Stipulations may be read at any time, unless otherwise ordered in a particular instance upon a showing of good cause.

5. At least one-half hour before commencement of trial each day, counsel shall furnish the court reporter with a copy of any document from which counsel intends to read that day, except depositions to be read by two people in question and answer form. Documents to be used during cross-examination are excepted.

6. Whenever a single person is reading deposition testimony, in order to enable jurors and the reporter to understand clearly, the reader will say "Question" before each question is read and "Answer" before each answer is read.

7. All documents or other non-testimonial evidence that will be admitted against at least one party without objection will be pre-marked as *numbered* exhibits. To effect the pre-marking and to avoid duplicative numbering, each of the parties will assign consecutive numbers to these documents and

objects, as follows: Plaintiff, 1-500; defendant 501-999. *The term "Exhibits" shall be used only for documents and objects that are to be received without objection or have been received in evidence over objection.*

8. The term "Marked Items" will be used for documents and other items, referred to in the proceedings, that are not Exhibits. A lettering system will be used by each of the parties to pre-mark as "Marked Items," for identification purposes, each piece of non-testimonial evidence it will offer to which objection has been made by the party against whom the item is sought to be admitted. The Clerk will supply the parties with stickers to be used in pre-marking documents and other non-testimonial evidence, either as agreed Exhibits or, for identification purposes, as Marked Items.

9. Counsel have the court's permission at all times to interrupt proceedings merely to object or move to strike. Counsel need not state the ground(s) of objection unless the court asks for the ground(s), but counsel may without invitation by the court state the ground(s) merely by reference to a Rule designated by number, among the Federal Rules of Evidence. Also, unless otherwise ordered (as may be done, for example, when the court interrupts to sustain an objection because there are obvious, valid grounds), counsel may state the grounds in customary legal jargon (*e.g.*, "hearsay," "irrelevant," "lack of essential foundation"). Counsel are not to go beyond a bare statement of the ground(s); supporting or opposing arguments will not be stated in the hearing of the jury without the court's permission.

10. Offers of proof will ordinarily be received only after the jury has been excused for a recess or for the day.

11. Conferences out of the hearing of the jury will be held to a minimum. *They will never occur at the beginning of a court day unless that timing is unavoidable.* When the court has directed jurors to be present at a designated hour, counsel asking for a conference out of the hearing of the jury at that



hour will be required to show good cause why the need should not have been anticipated so the jury could have been released early the preceding day and why the conference cannot be deferred until the end of the current day, or at least until the next recess.

12. Short conferences out of the hearing of the jury may be held at the side bar farthest from the jury box. The jury will be sent to the jury room if a more extended conference out of their hearing is required.

13. The objection of interrogating counsel to an answer that is nonresponsive will usually be sustained. Objections by other counsel solely on the ground that an answer is nonresponsive will usually be overruled. Sustaining such an objection is likely to lead to a new question that elicits exactly the same information as was stated in the excluded answer, and time is wasted. Of course, if some other valid ground of objection is added, a statement that the answer was nonresponsive may be needed and appropriate to explain why no objection was made to the question.

14. The court will not instruct a witness to "answer YES or NO" to (1) a multiple question, (2) a question that requires the witness to make or accept an inference or characterization rather than merely acknowledging or denying an observable fact, or (3) a question that is argumentative in form or in substance.

15. Questions framed to have more impact as arguments than as requests for testimony that the witness is competent to give are out of bounds. They will be excluded on objection and may be excluded on the court's initiative, without objection.

16. Ordinarily, questions asking one witness to comment on the credibility of another are out of bounds. A lawyer who wishes to ask such a question shall make a request out of the presence of the jury for leave to do so.

### C. Schedule

1. The court will aim for conducting this trial 9:00 a.m. to 4:00 p.m. Monday-Friday.

2. There will be no trial of this case on the following days: [Holidays and other days specially committed].

### D. Sequestration of Witnesses

If any party so requests, the following rules regarding sequestration will be enforced:

1. No person who is expected to testify as a witness in this civil action shall be present in the courtroom during the presentation of evidence except as follows:

(a) Professional persons engaged by a party or its counsel for the purpose of offering testimony as witnesses having specialized knowledge or experience may be present whenever evidence is being received, unless otherwise ordered.

(b) One representative of each party, designated by counsel to the court in advance of the trial as that party's representative, may be present throughout the trial.

2. A person who has testified and who is not expected to be called again by any party may be present in the courtroom after his or her testimony has been completed, but that person shall not state or summarize his or her own testimony or the testimony of others to prospective witnesses.

3. Counsel shall not state or summarize the testimony of others to prospective witnesses (other than professional persons within the group described in paragraph VII-D-1-(a) above) and shall not permit a prospective witness (other than a VII-D-1-(a) witness) to read transcripts of prior testimony of other witnesses.



**E. Miscellaneous Matters**

1. Documents filed in court during trial: A party filing a document in court rather than in the Clerk's Office must file, with the original, a copy of the first page. All documents will be given a docket number by the clerk.

2. Jurors may be permitted to take notes. If notetaking is allowed, instructions will be given in the form of Exhibit B.

**VIII. DETERMINATIONS OF FACT AND CONCLUSIONS OF LAW**

A. The following legal and factual issues (having been conclusively established in this case by Orders of March 20, 1992 and July 31, 1992 and accompanying Memoranda) will not be the subject of dispute at trial.

1. Borland copied into its Quattro programs the menu commands, menu hierarchy, macro language, and keystroke sequences of Lotus 1-2-3.

2. The menu commands, menu hierarchy, macro language, and keystroke sequences of Lotus 1-2-3 have copyrightable aspects.

a. The "idea" of the Lotus 1-2-3 user interface appropriate for analysis of the idea-expression dichotomy is that the user interface involves a system of menus, each menu consisting of less than a dozen commands, arranged hierarchically, forming a tree in which the main menu is the root/trunk of the tree and submenus branch off from higher menus, each submenu being linked to a higher menu by operation of a command, so that all the specific spreadsheet operations available in Lotus 1-2-3 are accessible through the paths of the menu command hierarchy.

b. The menu commands and menu hierarchy of Lotus 1-2-3 have expressive aspects and are copyrightable.

c. The Lotus 1-2-3 menu hierarchy was not limited to one or only a few possible arrangements at the time of Lotus' authorship.

d. The macro language and keystroke sequences of Lotus 1-2-3 are copyrightable to the extent that they incorporate copyrightable aspects of the menu commands and menu command hierarchy.

e. The expressive aspects of the menu commands, menu command hierarchy, macro language, and keystroke sequences are not trivial.

3. The emulation interfaces of the Quattro programs are substantially similar to Lotus 1-2-3, so that it is clear that Borland's copying of elements of 1-2-3 was illicit.

B. The following legal rulings limit the scope of evidence to be received at trial.

1. Evidence relevant to one or both of Borland's defenses of laches and estoppel that is not also relevant to a legal element of Lotus' prima facie case (or Borland's defense against Lotus' prima facie case) will not be received in the presence of the jury during Phase I of trial (in which the scope of Borland's infringement will be determined).

2. Substantial similarity in the mixed law-fact sense has been established and will not be the subject of further evidence at trial, even in relation to elements of the Quattro programs' emulation interfaces not yet determined to have been copied from Lotus or copyrighted by Lotus.

3. Evidence relating to elements of the Quattro programs not copied from Lotus will be excluded.

4. Lotus has not waived its right to proceed in this lawsuit.

C. The following questions (in terms of subject matter, though *not* form) will be the subject of Phase I of trial:

1. Did Borland copy the long prompts of Lotus 1-2-3?

2. Do the long prompts of Lotus 1-2-3 contain expressive elements that do not merge with the function of the long prompts—that is, do the long prompts have expressive elements not dictated by the need to explain the operations performed by associated menu commands and the relatively short length of the “long” prompts?

3. To what extent, if any, did functional constraints limit the number of possible ways in which the Lotus 1-2-3 menu command hierarchy could have been arranged at the time of its creation?

D. Evidence relating solely to Borland’s defenses of laches and estoppel and to appropriate remedies for Borland’s infringement of Lotus 1-2-3 shall not be received in Phase I of trial but may be received in a later phase or phases.

**ROBERT E. KEETON**  
United States District Judge

**EXHIBIT A****EXHIBIT MARKING SLIP**

The attached document or object is Exhibit No. \_\_\_\_\_

Instructions to the Jury:

You may consider this document or object as evidence only with respect to any party whose name is checked below. You may not consider this document or object as evidence with respect to any party whose name is not checked. If any limited purpose is set forth below then you may only consider this document or object for that limited purpose. If no limited purpose is set forth below, then you may consider this document or object for all purposes as between the parties whose names are checked.

<i>Party</i>	<i>Limited Purpose</i>
_____ Plaintiff(s) _____	_____
	_____
	_____
_____ Defendant(s) _____	_____
	_____
	_____
	_____



**EXHIBIT B****INSTRUCTIONS TO JURORS ON NOTE-TAKING**

Ladies and Gentlemen of the Jury:

You have the permission of the court to take notes during the evidence, the summations of attorneys at the conclusion of the evidence, and during my instructions to you on the law.

In many courts—probably in most—jurors are not permitted to take notes. The reasons are concerned with fear that taking notes may cause the jury, as a whole, to be less effective in serving as a completely fair and impartial factfinder. Because of the potential usefulness of taking notes, you will be permitted to take notes in this trial. However, for the purpose of protecting against the possible disadvantages that have led many courts to order that notes not be taken, I will instruct you to observe the following limitations:

1. *Note-taking is permitted, not required.* Each of you may take notes. No one is required to take notes.

2. *Take notes sparingly.* Don't try to summarize all of the testimony. Notes are for the purpose of refreshing memory. They are particularly helpful when dealing with measurements, times, distances, identities, and relationships.

3. *Be brief.* Over-indulgence in note-taking may be distracting. You, the jurors, must pass on the credibility of witnesses; hence, you must observe the demeanor and appearance of each person on the witness stand to assist you in passing on his or her credibility. Note-taking must not distract you from that task. If you wish to make a note, you need not sacrifice the opportunity to make important observations. You may make your note after having made the observation itself. Keep in mind that when you ultimately make a decision in a case you will rely principally upon your eyes, your ears, and your mind, not upon your fingers.

4. *Your notes are for your own private use only. Do not use your notes, or any other juror's notes, as authority to persuade fellow jurors.* In your deliberations, give no more and

no less weight to the views of a fellow juror just because that juror did or did not take notes. Your notes are not official transcripts. They are personal memory aids, just like the notes of the judge and the notes of the lawyers. Notes are valuable as a stimulant to your memory. On the other hand, you might make an error in observing and you might make a mistake in recording what you have seen or heard. You are not, therefore, to use your notes as authority to persuade fellow jurors of what the evidence was during the trial.

5. *Do not take your notes away from court.* At the end of each day, please place your notes in the envelope which has been provided to you. A court officer will be directed to take the envelopes to a safe place and return them at the beginning of the next session on this case, unopened. At the conclusion of the case, after you have used your notes in deliberations, they will be collected and destroyed, to protect the secrecy of your deliberations.

Robert E. Keeton  
United States District Judge



J.A. 106

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

CIVIL ACTION No. 90-11662-K

COURTROOM 11  
WED., FEB. 3, 1993  
Boston, Massachusetts

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LOTUS DEVELOPMENT CORPORATION

—vs.—

BORLAND INTERNATIONAL, INC.

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NON-JURY TRIAL PROCEEDINGS  
DAY 3

BEFORE THE HONORABLE ROBERT E. KEETON  
UNITED STATES DISTRICT JUDGE

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APPEARANCES:

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J.A. 107

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[3-42] Lotus lay in the weeds, as it were, and sprung the trap shut at a point when Borland had no options. Had Lotus made its claim known early, Borland could have done exactly what the Lotus executives feared Borland would do. Borland could have changed its product to make it non-infringing. I hope on this point, your Honor, that your Honor will read the decisions that we cite and consider them in your Honor's deliberations of this matter. We have repeatedly cited the *Haas* case to Lotus and Lotus has yet to join us on the merits of that case. They make no comment on it whatsoever. Perhaps Mr. Gutman will comment on it today, but that is the case upon which we primarily rely.

Let me move—I see I'm taking up a lot of time, your Honor. Let me move now to the next point I want to make. In the January 14th hearing, your Honor, your Honor asked Mr. Gutman about the application of fair use to this case. That's between pages 47 and 49 of the transcript. Your Honor raised a number of questions with Mr. Gutman on fair use. Mr. Gutman answered them at that time and then submitted as part of the record without opposition by us several letters that were intended to cure the kinds of questions that your Honor had asked. And as we considered what your Honor referred to, we went back to California and we pulled the very recent cases that your Honor was referring to. Primarily it would appear that your Honor was [3-43] referring to *Sega vs. Accolade*, and that was just published and rendered final on January 3rd of this year. And we considered the fair use points that your

Honor was making and we thought that those points were meritorious and we thought we would have considerable common ground with the Court on fair use, although we had not had that common ground on copyrightability. So when we filed our answer to the supplemental complaint we pled fair use that your Honor had suggested going to all the issues in the case, and we brief it very briefly in the submission more as a request to your Honor to give us guidance as to what more your Honor wants.

There is a very small body of case law with respect to fair use. I think your Honor is familiar with it, but the primary cases that are applicable here are the *Sega vs. Accolade* case in the Ninth Circuit and the *Galoob* case both in the Ninth Circuit and the District Court. All those are very recent cases. And the point is here that Quattro and Quattro Pro's use of Lotus menu command hierarchy is a fair use either in Key Reader or on the screen. The point we would argue and submit to the Court is that the organization or order of commands is necessary to run macros and we have and we will proffer in the record Mr. Gutman's examination of our expert, Mr. Liddle, for that proposition, and that the words on the screen are necessary [3-44] for some interactive macros and for the writing, debugging, modifying and recording of macros.

Now, as I say, your Honor, I think we have common ground with the Court here, because we understand that this also is addressed to the Court's equity. We have previously argued our position on copyrightability. Our view of 102 is that it's a safe harbor. Your Honor's view is a different view and your Honor has rejected our view. But we understand here that what we are asking the Court to do is precisely what the Court wants to do, that we are asking the Court to weigh and balance all appropriate considerations in the Court's view and do what the Court considers to be the fair thing to do and in the public interest. As the case law has said, fair use is an equitable rule of reason. It's used as a safety valve. Once a court concludes that the defendant has committed a copyright violation, has copied copyrightable subject matter, the court in its discretion using fair use can hold that that use is privileged, that it's not a violation of the copyright law.

Now, the statute lists four factors to be decided by the court in analyzing fair use and I'll discuss each one very briefly in a moment, but the point I want to make is that the statute says that these factors aren't exhaustive—I beg your pardon—that the case law and the legislative history says that these factors are not [3-45] exhaustive. According to the *Galoob* case they are intended to guide but not to limit analysis, and the *Galoob* case is relying on the legislative history that is referenced in that case. It is clear that the statute doesn't say how much weight you're to give to each of the factors or indeed to any factors that your Honor might consider. That's up to the Court's discretion.

Now, your Honor, I would like to briefly run through the four factors. What *Sega* says is that the second factor is to be considered the most important in a computer case of this type. *Sega* says that at page 1522, but I'd like to start with, of the four factors, the factors that Lotus might argue go more strongly to its side.

And the first factor listed is the purpose and character of the use, and that's the discussion of whether the use is commercial in part or in whole or how much and so forth. And the case law is very clear that copying for a commercial purpose weighs against finding of a fair use, but the case law is also clear that that can be rebutted by characteristics of a particular commercial use. All the cases that we've cited say that. *Sega* says explicitly the commercial nature of a use is a matter of degree and not an absolute. The *Galoob* case says that when evaluating the nature of the use as to whether it's a commercial use, the court should look first to the user's use of the Lotus menus [3-46] in the Borland product. That's where you start, the user's use. And we would argue and we believe the record shows and we would cite to your Honor's prior opinions that Lotus encourages people to write macros and freely admits the users own those macros, and Borland is giving people an avenue to run their macros, and that's the nature of the analysis that one might undertake. *Sega* at page 1522 indicates that it is important to note in a case like this that there's no evidence that the defendant sought to avoid performing its own creative work, and we would respectfully



argue to your Honor that we would make that same argument here. And finally with respect to the first commercial use factor, the case law says that the Court is free to consider the public benefit resulting from a particular use notwithstanding the fact that the alleged infringer may gain commercially. So that's the first factor that Lotus might suggest cuts in its favor.

The second factor that Lotus might say cuts in its favor is the fourth factor in the statute, the effect of the use upon potential market for or value of the copyrighted work. And the case law here is very clear. It says the fourth factor looks primarily to whether a use supplants—and that's the quotation—supplants the normal market for the copyrighted work. The *Galoob* case says, quote: "A fair use will frequently suppress demand [3-47] for a work, but as long as it does so without supplanting demand, the indirect detrimental effect on the market is not the subject of copyright protection." *Sega* is to the same effect, your Honor. It says: "While a use that effectively usurps the market for the copyrighted work by supplanting that work may be dispositive, quote, the same consequences do not and could not attach to a use which simply enables the copier to enter the market for works of the same type as the copied work."

Now, your Honor, we bear the burden here and I believe that on the record that will be tendered to your Honor we meet that burden, and we rely primarily on one document and it is the document that your Honor has heard so much about yesterday. It's the Wall Street Journal ad that your Honor will hear further argument about. This ad was published in both the Wall Street Journal and the New York Times. It's found in Volume IV, tab B-5 of the authorities in front of you. It was published by Lotus in those newspapers shortly after your Honor's July 31st opinion. It says a lot of things which are relevant in this case, particularly to the issues of macros and macro compatibility, but on the fair use point it says they've lost in the marketplace where 1-2-3 for DOS continues to dominate. "Based on a recent report from the Software Publishers Association, Lotus 1-2-3 accounts for seven out

[3-48] of ten new DOS spreadsheets and over 80 percent of all DOS spreadsheet revenue." So, your Honor, we would respectfully argue that we have not supplanted the demand for Lotus products in any sense. Now let me move to the other fair use factors in the statute.

The second factor is the one that the *Sega* case says should be considered by courts in copyright cases, and that is the nature of the copyrighted work. And *Sega* comments extensively on the fact that when a fair use case deals with a computer program, because of the nature of computer programs, fair use of the expression involved is to be easily found.

Now, I know your Honor is familiar with this case and I don't want to go through reading the quotations from it, but the argument that I do want to make is that the arguments that we have made to the Court and that the Court has rejected in the context of 102, the arguments about *Baker v. Selden* and *Feist* and *Altai*, *Sega* says are dispositive or relevant, at least, on the issue of fair use. And we would respectfully ask your Honor to consider those arguments in evaluating fair use here and consider the nature of the work, the utilitarian nature, whatever expressive qualities your Honor thinks it has, and consider that in the context in which *Sega* suggests that fair use of computer code expression in certain circumstances under [3-49] those cases is permissible.

The third factor and the last one I'll discuss from the statute is the amount and substantiality of the portion used in relation to the copyrighted work as a whole. According to *Sega* at page 1526, if Borland copied the entire work at issue, that would not preclude a finding of fair use.

The point I want to make about this, your Honor, is, we copied only as much as was necessary to give us macro capability. Your Honor has said in its prior opinions that the look of these products is very different. No one looking at them confused one from the other. The fanciful aspects that we previously discussed, the pull-down menu motif, the use of icons, on-line help, things like that, everyone admits are different, and we would suggest, therefore, that the third factor, like the second factor, cuts heavily in our favor.



Finally, your Honor, I would like to respectfully argue to the Court—and again I say that we understand we're addressing the Court's discretion here, we understand the case law that says that fair use is an equitable rule of reason, but I'd like to make a couple of other observations which I would respectfully ask the Court to consider in the context of fair use.

I would like the Court to consider the fact that [3-50] reasonable minds might disagree on the proposition that the menu command hierarchy is copyrightable. Certainly that was the case in 1987 when Borland did what it did, and I would respectfully ask your Honor to weigh that in the balancing of what's appropriate in terms of relief.

I would also ask your Honor to consider the effect of the relief upon Borland and upon the market generally. If Lotus asks for monetary recovery, money would be taken from Borland that would be used for software development and transferred to Lotus. I would respectfully argue that in a situation like this, I would ask that the Court's equitable powers not be used in that way.

The same is true of injunction, your Honor. I would argue that an injunction is not appropriate or necessary here given the balancing of fair use.

The point I want to make is that we understand from your Honor's prior decisions that your Honor considers aspects of the menu command hierarchy to be expressive. I am not now quarreling with that. Your Honor also considers aspects of the menu command hierarchy to be functional and utilitarian. I am arguing that we use the functional and utilitarian aspects and I would argue to your Honor and ask your Honor to consider that that is a fair use.

Let me now turn in the time remaining that I have to the issue of functional constraints. As I say, your [3-51] Honor, if I don't get through that fully, that is found and briefed in considerable detail at page 41 of the brief that we have submitted.

The question put to us by the Court in its procedural order at pages 20 and 21 is, quote: "To what extent, if any, did func-

tional constraints limit the number of possible ways in which the Lotus 1-2-3 menu command hierarchy could have been arranged at the time of its creation." That's the question put to us. I do think, your Honor, that for the most part this question will be reduced to a legal argument on both sides.

Let me say that I believe it is uncontested in the record they have proffered some of Mr. Kapor's declaration from the *Paperback* case. We will be proffering the remainder of it. I think it is clear that Mr. Kapor chose the words in the menu command hierarchy according to functional rules—I would cite Kapor Affidavit, paragraph 75, for that proposition—rules like the word has to intelligently convey to the user the purpose of each command, rules like a word on a particular menu level has to begin with a unique letter and so forth. We cite in our brief and we will tender the testimony of Ezra Gottheil, who was Lotus' 30(b)(6) designee, to the same effect. And we tender also testimony of Lotus' expert, Bernard Galler, to the same effect. So that's the nature of the record with [3-52] respect to the selection of the words.

We think that the record is also clear based on Mr. Kapor himself that the organization of those words was dictated or governed or implicated, whatever the appropriate word is, by five functional rules. And they are set forth in the brief and I won't read them, but they are set forth at Kapor paragraph 76, 77 and 78. They are things like only seven plus or minus two items on the line, words most frequently to the left and the top, that kind of thing. It is also clear in the record, the record that we'll be tendering and in fact Lotus has tendered, that the rules apply to the entire hierarchy, to the top level and to subsequent levels. Mr. Gottheil says that. We have also introduced some testimony. And the Court has said in its *Paperback* decision that the words were ordered according to predicted frequency of keystrokes.

Now, in prior treatment of this issue the Court had asked the parties—it was not clear to us and we asked the Court exactly how the Court wanted the issue framed. In other words, if the question were is the menu command hierarchy guided by functional principles, we think that the answer to

that is clear. The answer is yes. If the question is to what extent—do the application of these rules mean that invariably and inalterably there would be only one result, then the answer is almost certainly no. [3-53] And the Court said, "I understand that. I understand that there's something between one and a million and a half different ways to structure this. About where is it on the chart?"

Now, I guess our first attempt at answering that, which is not really an answer, is to say that under the law we don't think that is the right question, although certainly it's the right question in terms of the one that we're called upon to answer and I'll try to do that. But our point is that because the work was prepared according to functional rules as was the directory in *Feist*, for example, that makes it uncopyrightable whether there's one way to do it or 406 ways to do it. Insofar as we are able to determine, I cannot come up with a numerical result based on this record as to the exact number of ways that this can be done. I think that the Court can look at the record and try to make that determination itself, and if the Court wishes to do that, I would point out some of the testimony which we will be tendering and some of which has gone in for the proposition that these functional rules seriously constrict the number of choices for each word and its placement.

And I would cite first to the testimony of Dr. David Liddle at page 121. He is our expert. Your Honor asked yesterday how his name was pronounced and I'd just like to take a minute to explain who Dr. David Liddle is.

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[3-58] not the question that your Honor has asked us to decide with respect to our closings.

And with that, your Honor, I'll sit down. Thank you, sir, and I appreciate the opportunity to address the Court.

THE COURT: Thank you.

MR. GUTMAN: May it please the Court, I had originally planned today to discuss three issues, but with the Court's

permission I think I'd like to start with a fourth issue which was not on my agenda but obviously was on Mr. Reback's and I would like to deal with it briefly, and that's the question of fair use.

Your Honor heard me rest before this argument. Because of the accommodation we've granted Mr. Reback we've not heard him say those words, but I'm counting on the Court to keep him from in any way expanding or altering his evidentiary submissions on this case based on what he's hearing now and wouldn't normally hear until after he rested. But there's a funny thing about the fair use defense. I believe it's fair to say that it's an affirmative defense. I believe they have so treated it in their answer to the supplemental complaint, but it was nowhere in their answer to the original complaint that they filed a couple of years ago. I would submit that with respect to the issues we are addressing today and that we [3-59] have been trying this week, they have waived a fair use defense. They did not raise it in a timely fashion and I would suggest to your Honor that closing argument is a little bit late.

Second, again, unless the Court were to give them leave after what I'm about to say to expand the record, they've made no showing—even if all of my objections to their evidence are overruled this afternoon, they haven't come close to making a showing of fair use on this record. I've read *Sega* and I've read *Galoob*. Neither helps them, your Honor.

In *Sega* the issue was whether intermediate copying akin to research; that is, the taking apart, the decompilation of a program, when according to the Ninth Circuit you could establish that this was the only way that you could get to the unprotected ideas, could under appropriate circumstances be a fair use. Now, that may or may not be a right decision. It's a very controversial decision. It has not been uniformly followed across the country. A similar case in the federal circuit involving similarly related companies where the federal circuit was applying Ninth Circuit law I'm not sure is entirely consistent with it, but even if we assume that *Sega* were right, it doesn't help them here. It's got nothing to do with this. The *Sega* court was quite clear that what it was [3-60] distin-



guishing there was between the copying akin to going to a library and taking notes from a book and then not using those notes in the final product. The court gave the defendant no free pass if the final product they sold was copied. The limited fair use exception recognized in *Sega* was to the extent that it was the only way to get access to the unprotected ideas. If the only way to do that was to make an intermediate copy; that is, to decompile so that you could get a reconstruction of the source code, the Ninth Circuit said that was okay. So to get from there to here is a tremendous jump.

They have *Galoob*. In the *Galoob* case the issue there was the game genie which speeds up the Nintendo video game system, your Honor, and one of the issues there was the issue, the same issue or issues very close to the *Sony Betamax* case in the Supreme Court where one of the questions was can the person at home using one of these game genies be found to have infringed the copyright, and the court said no, that's a fair use. Among other things, it's not a commercial use. That is a far, far cry from where we are here.

Section 107 of the act lays out the factors. It is correct as the supreme Court said in *Harper & Row* that those factors are not exclusive. I have certainly not put in what proof I would have put in on that issue in this case [3-61] had that issue been properly in this case. But if we take Mr. Reback as having done so, your Honor, and if he has constructively rested on his record as it exists subject only to my ability to shoot it down based on my objections, and even if the Court holds that he didn't waive this defense by failing to include it in his original answer, he has still failed to meet the 107 factors.

I mean, looking at the one exhibit, the advertisement which he says is the heart of his case on fair use, that doesn't say that they haven't caused us serious commercial harm. All it says is they haven't killed us. They have caused serious commercial harm. And notwithstanding Mr. Reback's appeal to the equitable concerns of the Court and please don't deprive Borland of money to do research in software development, although Lotus could make better use of the money, I would

suggest, in terms of its own development efforts, we will show when we get to the remedy phase, we will show—and that will be a jury trial on damages—that they have injured us to the tune—assuming that your Honor accepts that my theories of damages is acceptable for the jury, and assuming that the jury agrees with what case we're going to put on, we're going to show that they have damaged us to the tune of hundreds of millions of dollars, and that will easily—I haven't put that proof in now, but that would easily blow [3-62] away whatever inference they want to draw from that one advertisement concerning whether or not they've had a serious commercial impact on my client's activity, and at the appropriate phase of this case we're absolutely prepared to prove that and we're looking forward to the opportunity.

Now, again, reserving my right to address fair use in a more substantial and serious fashion and with supporting evidence, assuming that I'm incorrect in the assumption that that issue has been waived for the issues that we're dealing with in this phase of the case, I'd like to move on if I could to the other issues that Mr. Reback raised and one he didn't.

I'd like to start with one he didn't. It's the question of copying, your Honor. This summer your Honor ruled on summary judgment and held as a matter of undisputed fact that Borland had copied the menu commands, menu command structure, keystroke sequences and macro language of Lotus 1-2-3 in the Quattro and Quattro Pro program. That ruling was correct. The material facts are undisputed. We are content with that record.

However, at the January 14th hearing your Honor asked us a question, and this is what Mr. Reback refers to as the fair use question. I understood fair use to be a fairly small part of the question. And the question your Honor put was, would it make a difference—if in fact the

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[3-92] Friday, I would like to make sure that any of our completeness objections, any of our Rule 32 objections, are included. So with the caveat of making sure that there are not



any counter-designations to Digate that ought to be in there for fairness, it is correct that on their affirmative defense, excluding Key Reader which we are not dealing with today, our objections are to the Declaration of Robert Kohn as specified and to four documents that were appended to the Declaration of Edmond Gregorian.

MR. DETKIN: Your Honor, I would take exception to any further counter-designation in that if anything was clear from the January 14th transcript, it was that the parties were standing on the record as it existed at the time of summary judgment. That's precisely what was submitted, it's my understanding that was what Lotus has relied upon in their designations, and that's what we're standing here prepared to argue.

MR. GUTMAN: As your Honor observed earlier on summary judgment, we did not go through evidentiary objections, including completeness. If he would like me instead to object to Digate, if we had a few moments to review their designations, I could probably come up with objections and we could keep what they want to put in of Digate out. What I was proposing here was that we instead treat these deposition transcripts the way we have most of [3-93] the others in which most of the objections were waived provided that completeness counter-designations all went in. I'm happy to do it either way, but I certainly did not waive my right to object to Digate and I don't believe I waived my right to object on grounds of completeness and to offer counter-designations.

MR. DETKIN: Your Honor, this may be a hypothetical argument. I'm willing to allow Mr. Gutman to take the time to look and see if he wants counter-designations, to see if we object to the counters—

THE COURT: All right. Well, then I will receive in evidence all of the matters proffered by Borland as listed in the citations to the record by both parties, the second page in in docket number 312, subject to my hearing and ruling on the objections to the Declaration of Kohn and to my hearing whatever there is to be heard with respect to the Digate designations. All right.

MR. GUTMAN: And, your Honor, there were also—I think I mentioned this a moment ago. There are also four documents on that list that we've objected to, they were exhibits to the Gregorian declaration, but with that addition that's where we understand us to be.

MR. DETKIN: That's fine, your Honor.

THE COURT: All right. Excuse me just a moment.

[3-94] MR. DETKIN: Your Honor, at this time we would offer the Declaration of Robert Kohn.

THE COURT: Wait just a moment.

(Discussion off the record with the clerk.)

THE COURT: The clerk is advising me that if we're going to have to have carry-over time tomorrow, she needs to know immediately to get it on the schedule. I think I'll just forget about that, give her the message not to worry about it. I trust we'll be able to finish today. If we aren't, the published schedule will be a little different from what I do tomorrow, but we'll live with that.

All right. Go ahead.

MR. DETKIN: At this point, your Honor, I would offer into evidence the Declaration of Robert Kohn.

THE COURT: All right.

MR. GUTMAN: Does your Honor have handy a list of our objections, plaintiff's objections?

THE COURT: I think so, but now let me just—

MR. GUTMAN: This was the addition on affirmative defenses that was filed this morning headed "Plaintiff's Objections to Borland's Record Designations Concerning its Phase I Affirmative Defenses."

THE COURT: Yes, I have it before me.

MR. GUTMAN: Our first objection, then, comes on paragraph 4, second sentence, on the grounds stated.

[3-95] THE COURT: Wait just a moment. Let me get it before me.

(Pause.)

THE COURT: And what are the grounds of objection?

MR. GUTMAN: Well, basically two, your Honor. To the extent that the sentence is using the royal "we," it's hearsay.

I don't believe Mr. Kohn is in a position to testify to what other people were aware of.

The second objection is, to the extent that it purports to discuss the content of various other statements, public statements by Lotus representatives, then there's another level of hearsay in here. So depending on the use for which this sentence is offered, I think we have a valid objection.

MR. DETKIN: Your Honor, as to the first objection, the royal "we" objection, I would point out that as noted in the first paragraph of Mr. Kohn's declaration, he was vice-president of the company, he's the secretary of the company, he's also general counsel, he was authorized to speak on behalf of Borland, and I believe there should be no problem with using the "we" to refer to Borland.

MR. GUTMAN: That may make everything he says an admission of Borland, but it does not give him the right to say what everybody at Borland thought or were aware of, [3-96] et cetera.

MR. DETKIN: As to the second objection—

THE COURT: Well, wait a minute. I think I should rule as follows on that objection, that I receive this as evidence of Kohn's awareness. If it becomes material to consider whether other persons were aware, other specific persons were aware, I cannot receive it as evidence that every other person in the Borland hierarchy was aware and therefore I can't receive it as to evidence that some other particular person was aware. So I sustain the objection to that limited extent, but I overrule the objection to the extent that I will consider it as evidence of Kohn's awareness.

MR. GUTMAN: Your Honor, I may not have stated it crisply enough, but there are really two objections.

THE COURT: Well, now, I'm coming to the other point.

MR. GUTMAN: Thank you.

THE COURT: The other point is that this does not identify what public statements are being referred to.

MR. DETKIN: Your Honor, that's then in paragraph 5. The next paragraph discusses that.

MR. GUTMAN: And the second and third sentences we've objected to as hearsay.

MR. DETKIN: Your Honor, we don't offer this [3-97] for the truth of the matter asserted.

MR. GUTMAN: I think they do. If not, I have a relevance objection.

THE COURT: All right. If you're offering it as evidence that statements were made by a Lotus executive, somebody who spoke with authority for Lotus, when the only evidence you have that such a statement was made by somebody with authority for Lotus is a report prepared by some other person purporting to say what some Lotus executive said to that person, then we do have a hearsay problem that I don't think is solved. So it does seem to me—I had understood that you were offering it for the truth of the assertion that a Lotus executive said this.

MR. DETKIN: We are offering it for the truth of the assertion that Mr. Kohn had read these articles in which the Lotus executive was quoted as saying this.

THE COURT: But not for the truth of the assertion that a Lotus executive did say this.

MR. DETKIN: That's correct, your Honor.

THE COURT: Well, all right. I receive it for that limited purpose, but I tell you that that doesn't mean that you have evidence that a Lotus executive actually said that.

MR. DETKIN: I understand.

THE COURT: All right.

[3-98] MR. GUTMAN: In fact, that witness testified that he never said it.

THE COURT: All right.

MR. GUTMAN: Your Honor, the same objection, since we've moved to our paragraph 5 objections, covered not just the second and third sentences of paragraph 5 but Exhibit A as well, which is the article.

THE COURT: Yes. I take it the statement you made refers to that as well and the purpose for which it's being offered.

MR. DETKIN: That's correct.



THE COURT: All right. The ruling I've made applies to that also.

MR. GUTMAN: Okay. Your Honor, as to the fourth sentence of paragraph 5, the same objection plus—the same types of objections, but not so easily cured. Because as we state in the document, we don't think that these passages would be admissible even as to the witness's state of mind, because there is no evidence in the record that he saw them in a timely fashion. And indeed, if one looks at the exhibits themselves, they bear the stamp "Lotus Library" and our production numbers, which makes it clear that these particular copies of these articles were the copies that we produced to them in discovery which by definition Mr. Kohn could not have had in front of him and [3-99] read at that time.

MR. DETKIN: Your Honor, that does not prove that he didn't use them at the time they were published—

THE COURT: Well, but he doesn't say that he did, so what evidence do I have before me—how can I receive this as evidence that he did read them when he doesn't even say so?

MR. DETKIN: Well, your Honor, I think the fair inference of paragraphs 4 and 5 together is that he did read them; however, that only goes to the relevance and not the admissibility of this particular evidence.

THE COURT: Well, it's not relevant unless it's admissible, and it's not admissible unless there's some evidence before me that some Borland executive read it, and this is not a statement that he read it. And I have to say to you that I assume the affidavit is carefully drafted and if he'd read it he would have said so, and when he doesn't say he read it, I don't think it's appropriate for me to draw the inference by looking at the two paragraphs together that he read it. So I sustain the objection to the fourth sentence of paragraph 5, and I take it that applies to Exhibit B as well.

MR. GUTMAN: Yes, your Honor.

MR. DETKIN: Your Honor, paragraph 4 does say that he was aware of public statements—that's plural—[3-100] of Lotus representatives, and that is a lead-in to paragraph 5 in which

he is then describing the statements. Again, I believe the fair inference—it may not have been drafted—

THE COURT: I'm sorry. I don't think I can properly read it that way. When things have been prepared as carefully as they have been for this trial, that kind of failure to state the critical question that bears upon admissibility it seems to me I should not infer was an accidental omission. I sustain the objection to the fourth sentence of paragraph 5.

MR. GUTMAN: The next objection, your Honor, is paragraph 11, first sentence.

MR. DETKIN: Your Honor, actually, the next three objections they have, they admit in writing that those paragraphs are admissible for state of mind, which is the purpose for which they're offered.

MR. GUTMAN: As long as that's the limited purpose, since he had no firsthand knowledge.

THE COURT: So the paragraph 11, first sentence; paragraph 12, first sentence and Exhibit C; and paragraph 13, second sentence, are offered and received only as to the witness's state of mind.

MR. DETKIN: That's correct, your Honor.

MR. GUTMAN: The next one, your Honor, is [3-101] paragraph 14.

MR. DETKIN: Actually, your Honor, I'm sorry. On paragraph 13—I'm sorry. I went a little ahead. Paragraph 13 I believe he can speak to of his own personal knowledge. That paragraph refers to an announcement of the Quattro product, the Borland product, as you know, and it's a statement that Borland's announcement received first-page coverage in the trade press. Mr. Kohn is an executive in a software company. I certainly think that he is qualified to state what did and did not appear in the trade press.

MR. GUTMAN: Your Honor, we don't know where, we don't know when, we don't know which publications.

MR. DETKIN: That's relevance. That's not admissibility.

THE COURT: Well, how is it going to help me if I don't know the answer to those questions somewhere in the record? How can I use it in my fact-finding?



MR. DETKIN: Your Honor, the point to be made by this paragraph I don't believe was so critical that it required a listing of the various trade press in which this announcement appeared.

THE COURT: Well, all right. Now, I will overrule the objection. I'll tell you that the lack of specificity has a bearing on what weight I can give to paragraph 13, but I will overrule the objection.

[3-102] MR. GUTMAN: Just so that your Honor understands the state of the related record, neither party has ever found or submitted any such article.

THE COURT: All right.

MR. GUTMAN: I would like to note that omission.

THE COURT: All right.

MR. GUTMAN: And so far as we know, there isn't one.

The next is paragraph 14, second, third and fourth sentences. Again, your Honor, we've got Mr. Kohn speaking on behalf of the corporate entity, we've got the royal "we," we've got speculation as to the thoughts and mental processes of other individuals.

MR. DETKIN: Your Honor, we have no objection if you treat this so-called royal "we" in the same manner you treat the others.

MR. GUTMAN: If they're offering it only for his state of mind and the Court believes it would be relevant on that basis.

MR. DETKIN: Well, as to the royal "we," whether you're talking about Kohn's state of mind or others in the company, I do agree with the ruling your Honor set forth before and I think that's a proper handling. As for the remaining hearsay, I believe he is testifying here as to [3-103] facts, as to what he believed, and he of course is competent—

THE COURT: But that's making it relevant only to his state of mind.

MR. DETKIN: Fair enough, your Honor. That's fine.

THE COURT: All right. So I think that sums up, that I receive the second, third and fourth sentences of paragraph 14 in relation to his state of mind, not for any other purpose.

MR. DETKIN: That's fine.

THE COURT: All right.

MR. GUTMAN: Paragraph 15, your Honor, on the grounds stated. I mean, this is even more extreme. Here he's purporting to speak on behalf of everyone at Borland, "Borland having heard nothing from Lotus." He has no basis for that.

MR. DETKIN: Well, first I note that they won't deny that Lotus never said anything to Borland, but getting beyond that, he's clearly competent to testify as to what was or was not received from Lotus. He's the general counsel, had—

MR. GUTMAN: He would not be in a position to speak to every possible communication between anyone at Lotus and anyone at Borland, and if he did it would be [3-104] hearsay. If this were limited to his—

THE COURT: I again—you know, there's another ambiguity about this "having heard nothing from Lotus." In the preceding paragraphs we've been talking about things that were heard directly and indirectly from Lotus, including alleged public statements. I think that insofar as that phrase "having heard nothing from Lotus" is concerned, I should receive it as evidence that this witness had heard nothing from Lotus other than what he's been saying he's been hearing indirectly. I take it this means no direct communications from Lotus.

MR. DETKIN: That's fine, your Honor.

THE COURT: I receive it for that purpose.

MR. GUTMAN: Paragraph 16, second sentence.

MR. DETKIN: Your Honor, we only offer this as is stated, permissible to show Mr. Kohn's state of mind.

THE COURT: Just a moment. (Pause.)

THE COURT: All right. I receive it for that limited purpose. I take it you're not pressing the objection against its being received for that limited purpose.

MR. GUTMAN: No, your Honor, only his state of mind for whatever relevance that has.

THE COURT: All right.

[3-105] MR. GUTMAN: Paragraph 17, second sentence, lack of personal knowledge.

MR. DETKIN: Your Honor, we would only offer that to show his state of mind as to what he believed and his belief in the ownership of "Lotus Magazine."

THE COURT: Well, all right. I receive it for that limited purpose.

MR. GUTMAN: Paragraph 18, third sentence.

MR. DETKIN: I believe this is the royal "we" objection again and we have no objection to it being treated as your Honor has treated the other—

(Defense counsel confer.)

MR. GUTMAN: Your Honor, I'm sorry. The second sentence has the problem too. Well, I guess it says "to the best of my knowledge," which means "so far as I know."

THE COURT: So you're proposing that I receive it only as to Kohn's state of mind?

MR. DETKIN: As my partner points out, we do believe he can speak for the company in that he is the corporate counsel, general counsel, and a vice-president and officer of the company, but, you know, that was your ruling before and we're willing to live with that ruling.

THE COURT: All right. He may or may not speak for the company on a particular issue. We've got the [3-106] problem of entity state of mind and we have to be concerned about who speaks for the entity on such a matter. If that becomes material, it would become an issue perhaps of substantive findings rather than admissibility of evidence. So if you are offering this only as to Kohn's state of mind, I think I should receive it for that limited purpose.

MR. DETKIN: We would be happy to say that at least for that purpose. We believe it is appropriate for other purposes, but we understood the Court's ruling on that matter.

THE COURT: All right. I receive it only as to Kohn's state of mind.

MR. GUTMAN: Thank you, your Honor. Paragraph 20, third sentence. This sentence confesses, your Honor. It begins: "Although I cannot state from personal knowledge."

MR. DETKIN: Well, I believe that's reading it out of context. He's referring to whether a common practice of Borland,

which he is competent to testify, was followed on a particular occasion.

MR. GUTMAN: I would beg to differ, your Honor. It says: "It is common practice for representatives of our competitors." This is—

THE COURT: Well, I receive it and will consider it literally. It doesn't say that's a common [3-107] practice of Lotus. It does speak to a common practice of representatives of competitors. I will receive it literally.

MR. GUTMAN: That's fine, your Honor.

THE COURT: Now, excuse me for interrupting this process, but I will have to break at this point and we'll break until 2 o'clock.

MR. GUTMAN: Thank you, your Honor.

MR. DETKIN: Thank you, your Honor.

(Lunch recess taken at 12:43 p.m.)

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(2:00 p.m.)

IN OPEN COURT

THE CLERK: Court is now in session. You may be seated.

MR. GUTMAN: Good afternoon, your Honor.

THE COURT: Good afternoon.

MR. GUTMAN: I believe when we broke for lunch we were up to—we had just completed our objection to paragraph 20 of the Kohn declaration, and the next one is paragraph 22 where our objection is as stated.

THE COURT: All right.

MR. DETKIN: Your Honor, this is a relevance objection I believe that Mr. Reback explained this morning about Borland's acquisition of Surpass.

[3-108] THE COURT: All right. I'll take that with the case.

MR. GUTMAN: I think there may be two separate relevance points here, your Honor, but I understand that your Honor is taking it with the case.

THE COURT: Well, it was also listed on—no, wait a minute. That was 22. I'm not sure I understand what you're saying to me. Two separate relevance objections?



MR. GUTMAN: Well, yes. Your Honor, to the extent that all they are trying to say in paragraph 22 is that they had discussions concerning a possible acquisition of Surpass, subject to there being something else in the record that links it up along the lines of Mr. Reback's argument this morning, and I'm not sure there is, that would be relevance objection number one. That is, if there isn't anything to link that up, then we would have an objection on relevance.

The second is, to the extent that they are intending to imply something about Lotus because of the references to Surpass' 1-2-3-compatible spreadsheet, that I think is a different point, and again, we would just want to preserve a relevance objection there.

THE COURT: All right.

MR. GUTMAN: Paragraph 23 has the second of those two relevance objections, namely the relevance of [3-109] Lotus' behavior toward Surpass coupled with the further problem of hearsay, because it purports to report what some out-of-court person said to Mr. Kohn.

MR. DETKIN: Your Honor, that's offered to describe Mr. Kohn's state of mind, or his diligence process with respect to the Surpass acquisition.

MR. GUTMAN: If it's clear that they are not offering any of this as any kind of evidence anywhere as to what Lotus ever did or didn't do with respect to Surpass, if that's how I understand it, then I guess there's still a relevance objection, but we've at least cleared up the purpose of the offer. But if they intend to argue—

THE COURT: Well, I cannot take it as evidence that Surpass never received any notice claim by Lotus, so that subject is plainly hearsay because it's a declaration purported to be a declaration of some person not here present.

MR. DETKIN: I understand that, your Honor. I believe there's plenty of other evidence in the record with respect to that matter.

THE COURT: Well, all right. Then it's received only for Kohn's state of mind.

MR. GUTMAN: Paragraph 24, your Honor, for the reasons stated.

MR. DETKIN: The relevance objection?

[3-110] MR. GUTMAN: Well, plus the others. It's not simply relevance.

MR. DETKIN: I'm not sure I understand the objection, your Honor.

THE COURT: Well, I understand the objection to be that if you are offering this to support an inference by me as fact finder that Lotus knew of the Surpass acquisition or knew of the use of the Surpass technology in Quattro Pro, then it's not admissible for that purpose.

MR. DETKIN: Your Honor, we're not offering it for that point. We're offering it for the point which is stated here, which is that Borland did in fact incorporate the Surpass technology into Quattro Pro and during the 18-month period between the time it acquired Surpass and shipped Quattro Pro did not receive any notice from Lotus. That is all it's offered for. There's no other inference intended.

THE COURT: All right. Received for that limited purpose.

MR. GUTMAN: Your Honor, there was one further objection in our list, lack of personal knowledge concerning whether or not Borland received notice. I mean, if that's limited to the personal knowledge of this witness—

MR. DETKIN: Well, your Honor, again, we maintain that a corporate officer can speak on behalf of [3-111] Borland. I understand you've overruled me on that.

THE COURT: Well, that's correct. He can speak for himself, but the fact that one corporate officer knows it doesn't mean that every other corporate officer knows it.

MR. DETKIN: I understand that, your Honor. Our position is that he can speak on behalf of Borland, I understand you've overruled me on that, and we're willing to allow you to—

THE COURT: All right. When one has authority to speak on behalf of an entity for one purpose, it doesn't mean he speaks on behalf of the entity for every other possible purpose.

All right. Paragraph 25.

MR. GUTMAN: Relevance and lack of personal knowledge, your Honor.

MR. DETKIN: The relevance, I believe, is explained in our papers. Lack of personal knowledge, I'm not sure I understand.

MR. GUTMAN: How would Mr. Kohn know everything that was or wasn't said in communications to which he was not a party, or how would he have firsthand knowledge indeed of the frequency of those communications or even that they took place?

THE COURT: He cannot speak for anyone other [3-112] than himself on these subjects.

MR. DETKIN: I understand that, your Honor.

THE COURT: All right. I receive it for that limited purpose.

MR. GUTMAN: Paragraph 26 and Exhibit E, your Honor, relevance for the whole thing, and also as to the second and third sentences, hearsay and lack of personal knowledge.

MR. DETKIN: I believe the basis for the knowledge is set forth in this paragraph. He attaches the trade press to which he refers for the release of SuperCalc5.

THE COURT: Well, what is Exhibit E? Is it attached here?

MR. DETKIN: It should be, your Honor. It's an article dated June 20th, 1988 from a trade press called "InfoWorld."

MR. GUTMAN: The paragraph does not say, your Honor, that he saw that article at the time, and the article itself is hearsay if they're offering it for the truth of any of its contents, including any of these descriptions of the menu, macro and file compatibility.

MR. DETKIN: The product itself is in the record.

MR. GUTMAN: No, it's not.

[3-113] MR. DETKIN: Is that 4 or 5? I apologize, your Honor. That was a different version of the same product. Mr. Kohn can certainly testify as to the features of SuperCalc and certainly as to the features of Quattro and Quattro Pro, which is the third sentence to which he refers. The actual release date—

THE COURT: Well, I have some problem with that. That is, when he is drawing comparisons between products, that's not a recitation of factual observations. That's an expression of his conclusions.

MR. DETKIN: Your Honor, according to this paragraph—

THE COURT: Does this witness purport to be capable himself of drawing the comparisons that are being made?

MR. DETKIN: He is an officer of a spreadsheet company, a software company, and—

THE COURT: Are you telling me that every officer of a spreadsheet company can do source code and object code himself?

MR. DETKIN: Your Honor, this is the features. This is stuff that comes up on the screen.

THE COURT: Well, I know, but I'm trying to get at the premise of your assumption that every officer of a software company knows everything there is to know about [3-114] software. That plainly is not so, is it?

MR. DETKIN: No, your Honor, I'm not intimating that it is. However, what is clearly inferred here is that he looked at the products. He is certainly capable of loading these products on the machine and looking at what features that SuperCalc has and he certainly knows what features Quattro and Quattro Pro have.

MR. GUTMAN: He never says he looked—

THE COURT: You know, I have another view that I frequently express in this courtroom with respect to expert testimony.

I do not credit any expert opinion that cannot be explained to me in a basis that I can understand it as a reasoned opinion. I think that's what I should do. I shouldn't be in the position of deciding that I should credit one expert's testimony rather than another expert's testimony on the basis of their respective qualifications or their credibility as they appear before me or whatever. If I am expected to receive and rely upon an opinion from an expert, I insist that it be explained to me in a way that I can understand it. That's the only way I can assess the validity, the credibility of the opinions themselves, and there's no way I can get that kind of help out of this kind of conclusion.

So I think what I should do is say I'll overrule [3-115] the objection, but I tell you how I go about evaluating testimony



that's placed before me when it's placed before me in opinion and conclusion form without any explanation that I can understand and assess, evaluate.

MR. DETKIN: That's fair enough, your Honor.

THE COURT: All right.

MR. GUTMAN: Your Honor, just so the record is complete, if in fact they are offering this as expert testimony, we would add the objection that Mr. Kohn, who is only a lawyer, would not be qualified as an expert in this field.

THE COURT: Well, I understand that. I'm saying whether it's expert opinion or just conclusions, that we sometimes let lay witnesses—in either event, when I'm trying to understand something as fact finder and make an evaluation, I weigh opinions and conclusions when I think they're properly before me on the basis of being able to understand them and understand the reasoned basis for it, and if that hasn't been provided for me, it doesn't carry anything like the weight that it would if it is provided for me.

MR. GUTMAN: Thank you, your Honor. The next objection is to paragraph 27 and Exhibit F on the grounds stated.

MR. DETKIN: Your Honor, again, this goes to [3-116] Mr. Kohn's state of mind in his capacity as general counsel and secretary of the corporation upon reading the policy statement which is reported.

THE COURT: Well, if that's the sole purpose for which it's offered, I'll receive it as bearing on his state of mind.

MR. GUTMAN: I would just add for the record again that what he claims to have read—actually, he doesn't claim to have read the policy statement and I'm not even sure he claims to have read Exhibit F, but Exhibit F, just so we're clear, is not the statement itself. It's a B & A report concerning the statement.

THE COURT: All right.

MR. GUTMAN: Paragraph 28 and Exhibit H.

MR. DETKIN: Your Honor, I believe their objections go to the weight of the evidence and not their admissibility.

MR. GUTMAN: There's no evidence here that he had personal knowledge of these things, your Honor.

THE COURT: Now, again, if you're offering it as bearing on his state of mind, it's one thing. If you're asking me to receive for a broader purpose than that a statement such as that first sentence, then it's not appropriate.

MR. DETKIN: The first sentence, I believe, [3-117] does go to Mr. Kohn's state of mind as—

THE COURT: All right.

MR. DETKIN: As to his personal knowledge, paragraph 1 sets forth clearly he has personal knowledge.

THE COURT: I'm sorry. Wait a minute. I didn't understand that. What sets forth personal knowledge?

MR. DETKIN: Paragraph 1 says that he has personal knowledge of the matters set forth in the affidavit.

THE COURT: I do not think that I could possibly accept that as an assertion that he has personal knowledge of everything set forth in this affidavit, because we've gone through a number of places where it's clear that he could not have. And so if he has made a general statement like that over in paragraph 1 and I can see from context it could not possibly be that he has personal knowledge of everything in another statement, then I don't read that general assertion in paragraph 1 as sufficient to apply to every other statement made in this document. That's just not an appropriate way to interpret the evidence.

Now, here he says: "Numerous other events during this period confirmed our belief." He doesn't identify for me what the events are, so I cannot tell whether he has personal knowledge, and I do not read this affidavit because [3-118] of the statement over in paragraph 1 as saying that he had personal knowledge of every other event he is referring to in paragraph 28.

MR. DETKIN: Excuse me, your Honor. I believe the rest of paragraph 28 sets forth the events referred to in that opening paragraph, that this event—I'm sorry—opening sentence—that is meant by way of an introductory sentence to the rest of the paragraph.

THE COURT: All right. In other words, you're asking me to read the introductory sentence as not referring to any other event than the ones that are referred to later in the paragraph.

MR. DETKIN: That's correct, your Honor.

MR. GUTMAN: If I might expand on the objection here a little bit, your Honor, he refers to declarations of other people that were filed in this case as if he's adopting what they have said. There's no evidence here that he knew it at the time.

THE COURT: All right. Now, let's take sentence 2. Are you telling me I should read this affidavit as saying that he was present in every technical discussion that occurred between the two companies?

MR. DETKIN: No, but you can read this as saying that he as an officer of the company knew that there were technical discussions between the two companies. They [3-119] are set forth more fully in the declarations referred to.

THE COURT: Well, that doesn't give me—what declarations specifically?

MR. DETKIN: There's a parenthetical saying: "See Declarations of Richard Schwartz and Paul Gross." Those are also contained within this submission to your Honor and have already been moved into evidence.

MR. GUTMAN: The problem with that reference, your Honor, is that these were declarations that were filed in this case on the summary judgment motion.

THE COURT: Are they before me in this trial?

MR. DETKIN: Yes, they are, your Honor.

MR. GUTMAN: But my point, your Honor, is, as of the time he wrote this declaration, he may well have seen their declarations and therefore at least at that time had been aware of the contents of their declaration even though as to him it still would be hearsay, but this doesn't say that he knew it as of the time when it would have mattered, namely at the time it was going on, and if he didn't, then it's not relevant. And I certainly would not want the Court to think that this was saying that he knew it at the time when in fact it doesn't say that and there's no support for that.

And indeed, the reference to Release 3.1, the last sentence in that paragraph, "Finally, Lotus' own [3-120] advertising, a sample of which is attached as Exhibit H, identifies 1-2-3-compatible menus as a key feature of spreadsheet software in

comparing 1-2-3, Quattro Pro, and other leading spreadsheets," as your Honor will see if you look at the chart, that's the chart about Release 3.1 of Lotus 1-2-3 which didn't come out till the fall of 1990, well after the events and whatever Mr. Kohn talked about. So if this is just an after-the-fact summary judgment vintage collection of hearsay that he is bundling for the Court as opposed to a statement of what he knew in the relevant time period which—and it does appear to be that—then I don't think it's relevant and we certainly ought to not have it admitted for the wrong reason.

MR. DETKIN: Your Honor, Mr. Reback argued eloquently this morning regarding Lotus' entire course of conduct throughout the relevant period as to their continuing course or pattern of deception in terms of misleading Borland, so even though 3.1 may have come out later—I'll be honest, I don't know the exact date—then that would still fall in—that would still be relevant to that course of conduct.

THE COURT: But it wouldn't be relevant to his state of mind as of an earlier point in time. That's what I understand the objection to be here.

MR. GUTMAN: Yes, your Honor. And the first [3-121] sentence says: "Numerous other events during this period," and if in fact this was information—

THE COURT: Do you agree that the "this period" that's referred to in sentence 1 is the period that did not incorporate the time when 3.1 was released?

MR. DETKIN: Your Honor, we're not sure about that. If I could just have a moment to confer with my client.

THE COURT: All right.

(Discussion off the record.)

MR. DETKIN: Your Honor, I have been convinced that this was essentially poor draftsmanship. The point is still a relevant one. It probably does not belong with this paragraph with the introduction referring to a particular period of time. So I would argue to you that it is still relevant to the course of conduct, but I would agree that does not fall within the relevant period discussed in that introductory sentence.



THE COURT: Well, then I have to strike the last sentence, don't I? Do you still claim that I should receive Exhibit H, and if so, what's the argument for it?

MR. REBACK: May we just confer for a moment, sir?

THE COURT: You may.

(Discussion off the record.)

[3-122] MR. DETKIN: Your Honor, there is another solution, which would be to strike the first sentence which is troublesome in the first place. That would take out the period.

THE COURT: No, I don't—listen, that's changing the witness's testimony. I can't do that.

MR. DETKIN: Your Honor, I can't add anything more in its defense and therefore bow to your ruling.

THE COURT: Well, I think, then, I have to strike the last sentence in Exhibit H. Now, as to the rest, I receive it as bearing upon the witness's state of mind, but not for any other purpose.

MR. DETKIN: That's fine, your Honor.

MR. GUTMAN: Your Honor?

THE COURT: Yes?

MR. GUTMAN: I'm not sure that I understand as it's sorted out that this is being admitted for the witness's frame of mind as to what time period, because we still—

THE COURT: Well, "during this period" refers to the time period before the commencement of this lawsuit, I take it, at the least. Is it more restricted than that?

MR. GUTMAN: That's the problem. We don't really know from reading it. If we look at the paragraph above—

[3-123] THE COURT: Well, I'm not receiving it with respect to events occurring after this lawsuit was commenced. I take it it's not being offered for that purpose.

MR. DETKIN: That's fine, your Honor.

THE COURT: All right.

MR. GUTMAN: Okay. Your Honor, on paragraph 29, the first sentence, it's just argument.

MR. DETKIN: Your Honor, I can see that is argument and it's merely intended as an introduction to the rest of the paragraph.

THE COURT: Well, the first sentence is struck; not evidence. Third sentence?

MR. DETKIN: It probably would be the fourth sentence, your Honor.

MR. GUTMAN: Actually I think it's third and fourth and we've got the royal "we" again as well. The point is that if the provisions are relevant, they should be before the Court rather than being described thirdhand by this witness.

MR. DETKIN: Your Honor, that assumes there is a writing for all these licenses and assuming that the writing is available, neither of which is shown here. This is just simply referring generally to the types of indemnities that Borland uses with third parties. And as [3-124] for the royal "we," I can't imagine an instance where it would be more appropriate when you're talking about the testimony of the general counsel who's in charge of intellectual property licensing to testify about what the licensing contains.

THE COURT: I'll overrule the objection to the third sentence.

MR. GUTMAN: And the fourth, your Honor?

THE COURT: And the fourth sentence.

MR. GUTMAN: Paragraph 30. We have objected to the fourth, sixth, seventh, eighth sentences and Exhibit I, and I hope we've counted correctly in terms of picking the right sentences.

MR. DETKIN: Taking them individually, your Honor, the fourth sentence says that Mr. Kohn contacted outside counsel in early 1990 having read conflicting press accounts. That's his action. I don't see what the hearsay would be.

MR. GUTMAN: Well, he's speaking to the content of the press accounts.

MR. DETKIN: If it's the conflicting press accounts that bothers Mr. Gutman, I'll concede that it was Mr. Kohn's belief that the press accounts were conflicting.

MR. GUTMAN: And concerning the discussion of Quattro Pro on a truck. The sentence recites or purports to [3-125] recite elements of the content of these out-of-court statements. If they're only offering it for his state of mind again,

your Honor, well, then I guess it's a different matter, but if they are asking the Court to take this as reflecting something about what—

THE COURT: Are you offering this for anything beyond his state of mind?

MR. DETKIN: No, your Honor, that's fine.

THE COURT: All right. I receive it only as to his state of mind.

MR. GUTMAN: And again, in the sentences that follow, your Honor, there are references to the content of the transcript, the content of what was indicated, what the article said, all of which is hearsay unless this is just his state of mind.

MR. DETKIN: Your Honor, this is for state of mind. After all, Mr. Kohn's state of mind is relevant. However, I would point out that the "Computer World" article is reprinted, and I'm not going to say that what's in there is not hearsay, but to the extent that Mr. Kohn is saying this was in the "Computer World" article, there it is for you.

THE COURT: All right. I receive it only as to Kohn's state of mind.

MR. GUTMAN: Including Exhibit I, your Honor?

[3-126] THE COURT: Yes.

MR. GUTMAN: Thank you. Paragraphs 31 and 32 on the grounds stated. It also looks a lot like argument.

THE COURT: I take it that also is being offered as to Kohn's state of mind. Is that right?

MR. DETKIN: Your Honor, it was offered for Borland's state of mind. However, I understand that you've ruled that he can only speak as to himself and that that same ruling would apply here.

THE COURT: Yes.

MR. DETKIN: That would be for paragraph 31. For paragraph 32, it's an affirmative statement that Borland has spent millions of dollars in acquiring technology. Again, he's a corporate officer, corporate secretary. I believe it is appropriate for him to provide this testimony.

MR. GUTMAN: In reliance upon Lotus' conduct?

THE COURT: Well, you see, there are some problems here now. With respect to the amount spent on the acquisition, I'm inclined to think I should receive it. As to his attribution of causation, "development expenses directly attributable," et cetera, and as to his first sentence, "In reliance upon," I think he can speak only for himself. So those parts—and I have the same problem with "marketing expenses directly attributable." Without the [3-127] basis for that conclusion, I can accept it as his state of mind, but to go beyond that, I think I don't have an adequate basis laid here for me to find that he knows or that I have a reasoned basis for understanding what his standard of direct attribution is. When a witness is speaking especially on a causation issue and doesn't tell me what standard of causation he is applying, I don't understand what it means.

MR. DETKIN: I understand your ruling.

THE COURT: So with those limitations, I think I can only receive that part of it as to his state of mind.

MR. GUTMAN: As to paragraph 33, your Honor, in rereading it I'm not sure that these objections only go to the first and fourth sentences. I think they probably go to the entire paragraph in that it's speculation, improper opinion, hearsay.

MR. DETKIN: Your Honor, these are all—this is the statement of the general counsel of Borland stating what he would have done had certain events occurred. Clearly as the general counsel and vice-president he is the person who would have taken these steps and I believe it's perfectly appropriate for this gentleman to be providing this testimony.

MR. GUTMAN: There's no evidence that he had the authority to make these decisions and he's speaking [3-128] hypothetically and speculatively.

THE COURT: I don't think I can take it beyond his own state of mind. I receive it for that purpose only.

MR. GUTMAN: Thank you, your Honor.

THE COURT: Now, does that complete Kohn's?

MR. DETKIN: Yes, that completes Mr. Kohn's first affidavit. There are four other documents which are part of the equitable defenses submission.



THE COURT: That's the next page, the Exhibits 24, 34, 36 and 37?

MR. DETKIN: That's correct, your Honor. I believe we can deal with these—these fall into two categories.

\* \* \*

[3-129] MR. DETKIN: Your Honor, as for Exhibits 34, 36 and 37, these are documents that—two of them are speeches given by Mr. Manzi and one is a memo that was circulated by Mr. Manzi. Mr. Manzi, of course, is the CEO of Lotus.

Now, we submitted all this last Friday based on the parties' representations that they were standing on the record on summary judgment. I received their objections to [3-130] these documents this morning just prior to the hearing. There's clearly foundation in Mr. Manzi's deposition for these documents. He admits that he gave these speeches and circulated the memo. In fact, I find it ironic they're objecting to Exhibit 34. It's a memo from Mr. Manzi that Mr. Gutman on the record stated in the Paperback deposition was exactly that, a memo written by Mr. Manzi.

MR. GUTMAN: If I may, your Honor, our objection to this—if I can save my friend some trouble, our objection to this is not on grounds of foundation. There is no quarrel that this was a memorandum written by Mr. Manzi.

The question, principal question—I suppose there is hearsay content to it; that is, another layer of hearsay that the fact that it was written by our CEO does not cure. But the other problem and probably the bigger problem is one of relevance, because if they're offering this for their affirmative defense case, I can't conceive of what relevance to that case it could have since by definition this is a document they never saw. The legend on the bottom says: "Lotus - Strictly Private," which as the deposition testimony reveals is the highest level of confidential treatment within the company. It bears also the designation "Specially Confidential" pursuant to the confidentiality stipulation in *Paperback*, and that [3-131] designation was carried over into this case. Indeed, the last lines of the text, if I may read them without waiving

confidential treatment of anything else in the document, say: "It is extremely important that we do not comment on the suits outside the company. If you are asked about them, please make sure you do not offer your comments, but only say that you cannot comment because the matter is still in litigation."

That being the case, I don't understand how this document, which absent a burglary or something I can't imagine they are going to claim and there's certainly nothing in the record to suggest they ever saw, can have any relevance whatsoever to any of their affirmative defenses.

MR. DETKIN: Well, your Honor, Mr. Gutman is arguing relevance. We offer it for a limited purpose which is in the first sentence of text. It states that Lotus filed suit against two, quote, clone, close quote manufacturers, and that goes to our defense as to—actually, I apologize.

Can I refer to this in court?

MR. GUTMAN: No. Your Honor, precisely the reason that out of all of our relevance objections this is one of a handful we have selected to argue live to your Honor is, if we are right about relevance, then we ought not to have this specially confidential memorandum from the CEO [3-132] of the company part of the file. We understand how your Honor likes to treat confidential materials and that you don't like them lying around, and in this instance, if we are right about our objection, the easiest solution is, your Honor can certainly look at it for purposes of ruling and all of that, but we can then take it away and we have one less document to worry about.

THE COURT: All right. Now, if I understand your statement of the purpose for which you're offering it, I think what I should do is to say to you that a statement at this time that the products of Paperback and Mosaic were clones is relevant to your claims about earlier periods of time. I take it for that limited purpose, but that means I don't need the rest of the document in the record and so I should simply state on the record that I receive that limited part for this purpose and the rest of it may be withdrawn from the record so the confidentiality is preserved.

MR. GUTMAN: Thank you, your Honor.

MR. DETKIN: That's fine, your Honor.

THE COURT: All right.

MR. DETKIN: Your Honor, Exhibit 36 is the speech from the Royal Sonesta Hotel that was the subject of one filing before your Honor. This is the outlined version. It is cited in our summary judgment papers and its [3-133] relevance is set forth there and discussed in detail. Again, I'm handcuffed from saying what contents of it we consider relevant in open court.

MR. GUTMAN: Without getting into the content, your Honor, and again, since these are very confidential materials, an internal speech, this was not published, this was Mr. Manzi speaking to his people, our—

MR. REBACK: There's only one place that we care about, your Honor—

MR. GUTMAN: If I may finish my point, and I would ask my brother not to read into the record in open court—

MR. REBACK: I'm not going to read anything. I'm just going to tell the judge what we're referring to.

MR. GUTMAN: The point—this speech was made five months, six months after we had sued them, your Honor. That being the case, we have a hard time understanding how it could even arguably be relevant regardless of its content to any of their affirmative defenses, because it came later.

MR. DETKIN: Your Honor, the relevant portion confirms Lotus' view—

MR. REBACK: Just a second. Your Honor, the part we would call your direction to is on the page numbered at the bottom 049168, and if you go about a third of the way up that page at the line starting "Competition," that's the [3-134] point to which we're referring, sir.

MR. GUTMAN: We've still not heard any theory of relevance.

MR. DETKIN: Read our summary judgment papers.

THE COURT: Give me just a moment.

MR. REBACK: Yes, sir.

(Pause - Court is reading.)

THE COURT: From that line how far, how many lines?

MR. REBACK: To the bottom of that page, sir.

(Pause - Court is reading.)

THE COURT: All right. Now, what is the objection?

MR. GUTMAN: The objection, your Honor, is that that statement made six months after the lawsuit was filed internally at Lotus with there being no evidence in the record, unless somehow it happened since the litigation started in this process, no evidence that anyone at Borland ever saw that or heard it or was familiar with its content, our position is that that can't be relevant to any of their affirmative defenses.

THE COURT: Well, why isn't it an admission as to state of mind and objectives and conduct at an earlier period of time which is relevant?

MR. GUTMAN: I'm not sure that—with waiver [3-135] out of the case, your Honor, I don't mean to quarrel with the Court, but it's not clear to me that on estoppel or laches our state of mind would be relevant.

THE COURT: Well, I overrule the objection and I will receive in evidence the portion of page 049168 beginning with the words "Competition from Borland" and extending to the bottom of the page.

\* \* \*

[3-163] MR. GUTMAN: Leaving that aside, I believe the only thing we have left is our objections to the Declaration of Eugene Buechele, which I am told is pronounced Buechele.

THE COURT: And under what tab?

MR. DETKIN: Which declaration is that, Hank, first or third?

MR. GUTMAN: Okay. Well, as I understand, there were three originally, the second was just dropped by Borland, so I'm working on the first.

THE COURT: And under what tab?

MR. GUTMAN: It's tab 1 of Volume 3B in your Honor's set.

[3-164] And the first objection, your Honor, is paragraph 4, second sentence. As stated on page 4 of our objections, it's lack of personal knowledge and an improper opinion without adequate basis. I would also add, your Honor, in light of the



fact of our stipulation concerning long prompts, that I don't know what the relevance of this is, either.

MR. DETKIN: Well, we're going to go back to relevance.

MR. GUTMAN: No, I raise that because as I understood this, the purpose of this particular Buechele declaration was to try and establish that VisiPlot and VisiTrend had long prompts. If that was what this was about, that issue I think is gone because we've stipulated that long prompts are no longer in the case and are not material to any issue that is in the case, and if I'm right in that and my friends from Borland agree with that, they might choose to withdraw this declaration and we can save your Honor—

MR. REBACK: No, sir.

MR. GUTMAN: Then I have my objection. And I would add relevance—

THE COURT: Well, what does the witness mean by the control mechanism of the 1-2-3 user interface? I understand the two-line moving cursor, but if he's talking [3-165] about something broader than that, then I don't know what he's talking about and I need to understand that in order to evaluate both the evidence and this objection.

MR. REBACK: Yes, sir. The definition of control mechanism is provided in the summary judgment brief, however, and that's the problem.

THE COURT: Wait a minute. How do I know that's the definition he is using?

MR. REBACK: Well, let me say that for the purposes of what he is using, if you go down to paragraph 5 you see the control mechanism similarities and they are listed there. The one we care about, your Honor, is the fifth one down, the ordering of commands by anticipated frequency of use. Forget what he says about Lotus. What we care about is that "Yes, under VisiTrend/Plot." That's what we care about.

MR. GUTMAN: Your Honor, now that I understand the purpose of the offer, there is the problem not only that the witness never says what he means by control mechanism and Mr. Reback cannot fill in that definition for him, but where's the basis—where is the showing of firsthand knowledge that the

commands in both of these products were ordered based on anticipated frequency of use?

MR. REBACK: What's being proffered is the order of commands in VisiTrend/Plot. If you look paragraph [3-166] 2, the last sentence, he says that he was in charge of that product and in charge of the development of that product.

MR. GUTMAN: In paragraph 3 he says it was designed by Mitch Kapor.

MR. REBACK: Yes, and licensed to VisiCorp, and he says that he was the person in charge of that. When Mitch Kapor left, he was in charge of the ongoing development of VisiTrend/Plot.

THE COURT: All right. I will overrule the objection. I take account of the arguments you're making, Mr. Gutman, in my weighing and evaluating the evidence, but I overrule the objection.

MR. GUTMAN: Thank you, your Honor.

Paragraphs—oh, I'm sorry. Was this—we moved from the second sentence—we moved, your Honor, from the second sentence of paragraph 4 into the fifth item on their chart. I had objections to both. Was your Honor ruling on both?

THE COURT: Well, I hadn't, but I will since it's been explained to me that the two were meant to go with each other.

MR. GUTMAN: Am I correct in understanding that the offer in the second sentence is now limited to that fourth point and then only VisiPlot/VisiTrend rather than 1-2-3? Because otherwise—

[3-167] THE COURT: Is that correct?

MR. GUTMAN: —we have the control mechanism problem.

MR. REBACK: For these purposes, yes, that's right, for this phase of trial, your Honor.

MR. DETKIN: Just to correct one thing Mr. Gutman said. I believe he said the fourth point. I think he meant the fifth point.

MR. GUTMAN: Fifth point, that's right. Thank you. The next objection, your Honor, is paragraph 6.

MR. REBACK: I don't understand the objection. He's describing the product that he's in charge of developing.

MR. GUTMAN: He was at the licensee, number one. Number two, he is expressing an opinion concerning similarity. Number three, he has not shown the qualifications to express that opinion. Number four, he has not shown the sufficient familiarity—even if we assume for these purposes that he knew VisiPlot/VisiTrend, because he works at the licensee rather than at the developer, he has still not shown sufficient familiarity with 1-2-3 to be expressing the opinion he does concerning similarity.

THE COURT: Well, all right. Now, let me make clear to you that I am not receiving this as an opinion on [3-168] any legal issue, so when he uses "similar," it is not similar in any legal sense. This is a factual sense, lay sense of similar. I overrule the objection on the understanding that that's the way I am reading "similar."

MR. GUTMAN: Thank you, your Honor.

Your Honor, the next point's the third Buechele declaration.

THE COURT: Is that tab 3?

MR. GUTMAN: Tab 3, your Honor.

THE COURT: All right.

MR. DETKIN: Your Honor, this went to long prompts and I would suggest that the objection is moot.

MR. GUTMAN: Well, if it went to long prompts, I would suggest the evidence is moot.

MR. DETKIN: Fine. You withdraw your evidence on copying?

THE COURT: Well, wait a minute. Are you withdrawing this proffer since it went to long prompts?

MR. REBACK: May I just take a moment to look at it, sir? (Pause.)

MR. REBACK: The reason I can't withdraw the proffer is because I believe—excuse me just a second, your Honor.

(Defense counsel confer.)

[3-169] MR. REBACK: The reason I can't withdraw the proffer is that Mr. Gutman put into evidence VP-Planner Plus

on the issue of long prompts, and if he'll take that out, I'll take this out.

MR. GUTMAN: Your Honor, I believe what Mr. Reback is referring to was either a declaration or a deposition of Jim Stephenson from the *Paperback* case which did address the long prompt point and which we removed, that evidence we deleted, so if that's what he's talking about, it's already out.

MR. REBACK: No, the product you put in.

MR. GUTMAN: If the product is in, your Honor, it's in as another—excuse me a moment. I'm not sure if VP-Planner Plus is in.

(Plaintiff's counsel confer.)

MR. GUTMAN: Your Honor, VP-Planner Plus is already out. Its only offer was to support a chart we had prepared. If we'd had to litigate merger of long prompts, we had a chart that was going to show it.

MR. REBACK: Based on that proffer, your Honor, I withdraw this.

\* \* \*

[3-181]

MR. REBACK: No. I'm glad your Honor raised that. I don't want the Key Reader portion closed, but I don't think we should be going back for designations and counter-designations on the other things.

THE COURT: No, I understand that, but what I mean is, I can't decide the matter —

MR. REBACK: Yes, sir, I understand that. Your Honor said that you think that's the best procedure and we agree. That's fine.

THE COURT: Okay. That's very good.

MR. REBACK: I do want to make it clear we're not going to have any more designations, for example, on equitable defenses and things like that.

Okay. The only other thing I want to do is, I want to make sure—we moved this into evidence, there was no precise objection on it, and I don't want there to be any misunderstanding. This is a Wall Street Journal advertisement from



Lotus bearing the Lotus copyright notice. It's found in Volume IV of your book, your Honor, at tab B-5, and what I'd like to do is hand the true copy of it up because you have a smaller copy which is harder to read.

THE COURT: Now, was there objection to this?

MR. GUTMAN: Yes, your Honor. We understood it to be a Key Reader document, but if I understand now that [3-182] Mr. Reback is offering it in support of fair use on the non-Key Reader case, I have an objection of relevance, because we don't believe that issue is in this case because they never raised it in a timely fashion in their answer.

THE COURT: All right. Now, I have ruled on a similar objection before by saying I overrule that objection. I am not making any decision at this point on the relevance issue or on the substantive arguments between you as to whether the fair use in the sense that Mr. Reback is using it is before me in this case as distinguished from the more limited question about fair use as you understood my question to you in the January conference.

MR. GUTMAN: No, I understand, your Honor, and if I may just make one further clarification responding to something that Mr. Reback said.

Since it was our position—it was our understanding without question prior to Mr. Reback's argument today and it is still our position that fair use has not been raised as a defense on anything other than the supplemental complaint, we have not put in any case on fair use.

Now, I don't believe that what he has offered, if I've understood him correctly, on fair use apart from the supplemental complaint would make out a fair use defense, so I think not only has he failed to plead it in a timely [3-183] fashion and therefore waived, but I think if he is saying that he has now offered everything he wants to offer on fair use and he's rested on it, I would also argue that we would be entitled to a directed verdict. But I just want the record to be clear so that there's no —

THE COURT: I understand that and that argument you may—it has been made to me. I consider it.

MR. GUTMAN: And if your Honor does decide to let him argue fair use in this case, we would like the opportunity to put on proof if that's necessary. We are not resting on that issue. That's why I wanted to make it clear now.

THE COURT: Well, now, maybe we better pursue that a moment longer.

Mr. Reback, how do you respond to the proposition that if I do not rule that by the directed verdict standard that what you have offered on fair use as you have defined it today in your argument, then Lotus has not had the opportunity to present its evidence on this subject?

MR. REBACK: Well, I had thought their evidence was in, your Honor, because they put in the pages—the agreements on the fair use point your Honor raised. They put a bunch of evidence in on copying.

THE COURT: Well, on that proposition I did not in my questions—even though you've interpreted [3-184] otherwise in your argument to me today, I did not in my questions in the January conference raise with you any question about fair use in the sense in which you have used it. I was talking about the question whether the fair use by a third-party would affect the issues in this case if Borland instead of copying directly copied from something that was a fair use by a third-party. Now, I thought I made that very clear in the questions I was asking.

MR. REBACK: You did ask questions directed to that, your Honor.

THE COURT: Yes. So I never asked a question or suggested to you that there was any fair use issue in this case in the sense in which you have developed it in your argument today. So it does seem to me that if you want to contend that fair use in the sense you have argued to me today is in this case, then I have to give Lotus an opportunity. I certainly didn't give them notice that anything like that was going on in this trial. I have to give them an opportunity to offer their evidence on that subject.

MR. REBACK: Well, if that is your Honor's desire and that's what you think —

THE COURT: Well, it's not my desire. It's the only way I think we can have a fair trial.

MR. REBACK: The reason that we only put a [3-185] small portion of this in our brief is because—I guess it's the point that Mr. Gutman was making. If your Honor is not interested in hearing this, doesn't believe it's meritorious or is not ready to make a decision on it —

THE COURT: No, you're putting it entirely wrong. It's not my desire. I make rulings about what I think is appropriate for a fair trial in the case. My desire is totally irrelevant. What I would wish is not the basis of my rulings. I make rulings that I believe are correct according to the law and the facts in the submissions before me.

Now, I have said to you that in order to have a fair trial on the fair use issue in the sense in which you have raised it in your argument today, I can only do that it seems to me when I have given notice to the parties that that's what we're doing and have heard all the evidence that both sides want to offer on that subject.

MR. REBACK: All right. Then your Honor will permit Lotus to make the same kind of argument that I make today, to designate the portions of the record that they would like to use for that purpose. I understand your Honor's ruling. That's fine.

THE COURT: I'll tell you what I think would be a more efficient way of proceeding. That is again going to delay my reaching the other issues that I would otherwise [3-186] decide.

MR. REBACK: Yes, sir.

THE COURT: I think it probably makes more sense to say that issue is not on trial in this Phase I, but if you want it to be on trial in this Phase I, then I don't think I should be deciding anything until we have reopened the record to get all of the evidence that both sides want to offer on fair use in that sense or else I have heard arguments and ruled that it comes too late, which I take it is another position Lotus is asserting.

MR. REBACK: Well —

THE COURT: You know, I haven't even heard your argument as to why I should allow you to raise this issue this late in the proceedings. You suggested to me this morning that I raised it. I don't think that's a fair reading of what I asked in the January conference. I didn't raise it, the issue that you're arguing. I raised a very different kind and much narrower question.

MR. REBACK: I understand, your Honor. I guess we were prompted by your Honor's comments at the time that you wanted to resolve everything on the issue and I guess we just took a broader view than your Honor had intended. But what I would like to do, I think, is to get that matter resolved as well, because your Honor has indicated that he only wants to hear all of this once.

[3-187] THE COURT: Well, then I think probably the first step I should take is to receive your written briefs very promptly on whether it's appropriate for me to take that issue in this case when it's first raised at this late stage.

MR. REBACK: When would you like us to submit the briefs, sir?

THE COURT: As quickly as you can.

MR. REBACK: Two weeks?

THE COURT: Simultaneous submissions —

MR. REBACK: Sure, with a week to reply.

THE COURT: All right. Simultaneous submissions in two weeks and a week to reply.

MR. GUTMAN: If I could just check the calendar, your Honor, because I'm going to be away on vacation next week and I want to make sure that I'm not —

MR. REBACK: Mr. Gutman, I'm going to be on vacation too. What's your proposal, Mr. Gutman?

MR. GUTMAN: If I could consult the calendar, I do want to make sure that I have some time back before the brief is due. And under the stipulation we already signed, your Honor, our submission on Key Reader is due the 19th, so we do have another assignment during that period of time.



THE COURT: Well, the two weeks would have been the 18th. I would suggest we do them both on the 19th [3-188] instead of one the 18th and one the 19th.

MR. GUTMAN: If I could just consult with my teammates to be sure I'm not going to be burning out anybody here.

MR. REBACK: Actually I think we both have a problem. Mr. Gutman says he has vacation for the week of the 8th, and Mr. Detkin and I had assumed we'd be finished with this. We have vacation the week of the 15th. Perhaps the first submission could be made the 26th and a reply the week later.

THE COURT: Twenty-sixth of February and the 5th of March.

MR. REBACK: Yes, sir, please.

MR. GUTMAN: That's fine, your Honor.

THE COURT: All right.

MR. GUTMAN: I was going to suggest—now, as I understand it, this brief is addressed to the question of whether it's too late.

There's another possibility that had occurred to me, and that was, if Mr. Reback has made his showing; that is, if he rested or is about to utter the words "I rest" today on this defense on the assumption that it's in the case, I could at the same time in the alternative make a motion for a directed verdict on that. This is an issue on which—

[3-189] THE COURT: Yes, or to be more precise, a Rule 50(b) motion I think it is now with the amendment of the rules. I hope I'm remembering correctly.

MR. GUTMAN: That's what I was referring to, your Honor.

MR. REBACK: The problem with that is it may not resolve everything.

THE COURT: I beg you pardon?

MR. REBACK: It may not resolve everything.

THE COURT: Well, that's true. If I don't sustain it, it does not. We go on from there.

MR. REBACK: Let's just go on the schedule we discussed.

MR. GUTMAN: But as I understand it, the schedule we discussed would only be resolving the question of whether it's too late for him to raise the defense. What I was proposing to

do was to resolve two issues in the same round of briefs; (a) is it too late. If the answer to that is yes, it's too late, then your Honor never has to reach the second question. B, if it's not too late, is it in any event too little, which your Honor could rule on, and the only way —

THE COURT: Mr. Reback, that makes sense to me unless you're saying that if I'm going to try the issue, I'm going to let you have it this late, you want to put [3-190] something more in.

MR. REBACK: No, that suggestion I think makes sense to me as well, your Honor, but if Mr. Gutman is intending to file something in support of his directed verdict, I would ask to be able to file something in response.

THE COURT: Well, of course. What I was proposing—I think what Mr. Gutman was proposing is, we've got the same schedule. He would include that in his filing on the 26th of February. You would include it in your response on the 5th of March.

MR. REBACK: Okay. If I have to do both of those things, can I get a two-week reply on that one, your Honor, taking me to March 12th? Because Mr. Gutman will have had three or four weeks to —

THE COURT: Well, do you want to just make all of the responsive submissions, both of you, you file your original submissions on the 26th and responsive submissions on March 12th?

MR. REBACK: That's fine, your Honor.

THE COURT: All right, that's fine.

MR. GUTMAN: Thank you, your Honor.

MR. REBACK: I don't want to leave without moving this—making sure this is in evidence.

THE COURT: I have received that in [3-191] evidence—

MR. REBACK: Thank you, sir.

THE COURT: — for the limited purpose, yes.

MR. GUTMAN: That's fine, your Honor.

THE COURT: All right.

MR. GUTMAN: And if I'm moving for a directed verdict, I would have wanted it.

THE COURT: All right. Now, am I correct then in understanding that except for the Key Reader evidence that we have yet to resolve, both sides are resting at this point?

MR. GUTMAN: In terms of the evidence, your Honor, yes. There is one further matter I wanted to raise, but it is not an evidentiary submission.

THE COURT: All right.

MR. REBACK: Can I hear that, please?

THE COURT: Both sides—well, all right. Do you want to hear that first? Okay. What is it?

MR. GUTMAN: Your Honor, it is a small matter and it will take only a couple of minutes, but there is a piece of argument that I would have delivered when we did our closing arguments but for the fact that I couldn't when we delivered our closing arguments because it turns on rulings your Honor made after the argument with respect to Mr. Kohn's declaration. And what I would ask is for the [3-192] Court's patience after Mr. Reback rests and all of that is clear to supplement my closing argument simply to point out something which I think your Honor should have in mind in light of the rulings that were made on the Kohn declaration which I obviously couldn't argue this morning because your Honor hadn't yet made those rulings. I just want to bring something to —

THE COURT: Well, of course if I do that, I'll have to give Mr. Reback an opportunity for rebuttal on that.

MR. GUTMAN: I understand that, your Honor. It should take a couple of minutes.

THE COURT: All right. Any objection to that, Mr. Reback?

MR. REBACK: Well, I do object on the grounds that I went, he went, and then I didn't take a reply, but —

THE COURT: Well, I think, though, it is true that I accommodated you by allowing this to occur before the record was clear and that's what this request relates to, so I think should allow you both to speak again in that respect.

MR. REBACK: Very well, sir.

MR. GUTMAN: Thank you, your Honor.

THE COURT: All right. Now, I'm about to hear that argument. Is it true that both parties now rest except as to the

additional evidence on Key Reader which I am to [3-193] receive under the agreement?

MR. REBACK: Just to be clear, this document, the Wall Street Journal, is in the record on fair use?

THE COURT: Well, Mr. Gutman, do you have any problem with that, that the Wall Street Journal item is in on the fair use evidence? This is not a question of its sufficiency.

MR. GUTMAN: No, I understand. Your Honor, for purposes of my motion for a Rule 50 motion on fair use, certainly it may be considered without waiving any other relevance objections that there may be to it.

THE COURT: Well, as to relevance objections, of course, I take that along with the case.

MR. GUTMAN: This is authentic document. We have no objections other than relevance.

THE COURT: Okay. It's in.

MR. REBACK: Thank you, sir.

THE COURT: All right.

MR. REBACK: The only—I hate to do this. The only question I had is, everything would be closed with the exception of Key Reader? That's what your Honor is asking us?

THE COURT: Yes.

MR. REBACK: Okay. Now, in the event that Mr. Gutman's motion is denied for directed verdict on the fair [3-194] use, what then?

THE COURT: If both his motion that it's untimely and his motion for judgment at the close of the counterclaimant's evidence is denied, then he will have an opportunity to present evidence on the Key Reader before I make a decision on that question.

MR. REBACK: Okay. I was just asking about the status of evidence on fair use. That was my question.

THE COURT: Oh, wait a minute.

MR. GUTMAN: I think your Honor meant to say fair use.

THE COURT: I meant to say fair use when I said Key Reader.

MR. REBACK: Okay. Well, what I'm asking is, am I then foreclosed from submitting rebuttal evidence? Because I don't



think I should be foreclosed if he's going to submit some more evidence.

THE COURT: Do you want to respond to that, Mr. Gutman?

MR. GUTMAN: Well, your Honor, I think we would be in the position, if I understand it correctly—he has put on a trial of his affirmative case because he has the burden on this affirmative defense on fair use. I am moving at the close of that. If I lose that motion, then I would put on my case and I would think that his right, if [3-195] any, to put on anything after that would be the way it would work in any other trial to the extent—

THE COURT: Which is to rebut your evidence as long as it's not repetitive of what he put on.

MR. GUTMAN: Exactly. As long as it fits in the scope of proper rebuttal he would have it, but nothing else.

THE COURT: All right. I think that's appropriate.

MR. REBACK: I think so too, sir.

THE COURT: All right, fine. All right. I'll hear your supplemental argument. Well, you rest also, I take it.

MR. GUTMAN: Yes, your Honor.

THE COURT: All right, fine.

MR. GUTMAN: Your Honor, I'll try to do this quickly and I'm sorry it doesn't quite flow the way I would have hoped it would have if it had fit in integrally with the rest.

But your Honor will recall that in going through the Kohn declaration today, a great many of the paragraphs, including a number that seemed to have much substance, ended up being stripped or reduced in the offer to being offered only for Mr. Kohn's state of mind. The reason that's significant is laid out in some deposition testimony of Mr.

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UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

CIVIL ACTION NO. 90-11662-K

Courtroom 11  
Wednesday, March 31, 1993  
Boston, Massachusetts

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LOTUS DEVELOPMENT CORPORATION

VS.

BORLAND INTERNATIONAL, INC.

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NON-JURY TRIAL PROCEEDINGS  
DAY 4

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Before:

THE HONORABLE ROBERT E. KEETON  
United States District Judge

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APPEARANCES:

O'SULLIVAN, GRAEV & KARABELL, by Henry B. Gutman, Esquire, Kerry L. Konrad, Esquire, Joshua H. Epstein, Esquire, and Paul M. O'Connor III, Esquire, 30 Rockefeller Plaza, New York, New York 10112, on behalf of the plaintiff.

WILSON, SONSINI, GOODRICH & ROSATI, by Gary L. Reback, Esquire, Peter N. Detkin, Esquire, Andrew G. Konstantaras, Esquire, and Isabella E. Fu, Esquire, Two Palo Alto Square, Palo Alto, California 94306

—and—

DONNELLY, CONROY & GELHAAR, by Peter E. Gelhaar, Esquire, 176 Federal Street, Boston, Massachusetts 02110, on behalf of the defendant.

TIMOTHY J. WILLETTE, RPR-CM  
Official Court Reporter  
U.S. District Court—P.O. Box 347  
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(617) 248-0604

[4-5]

MR. GUTMAN: I have no problem with turning them off, your Honor.

THE COURT: All right.

MR. GUTMAN: I'd just as soon leave the computer on, if that doesn't distract anybody.

THE COURT: Well, you could. All right, sure.

MR. GUTMAN: I can turn the Court's monitor off, too, if your Honor would like.

THE COURT: All right.

(Monitors turned off.)

MR. GUTMAN: Your Honor, the motion that we made orally at the close of the Phase I trial in February when Borland's counsel in closing argument raised the fair use defense as to that original complaint which had not previously been pleaded, and indeed their leave to amend was not even sought until a week after that trial, I called it Rule 50. Your Honor correctly corrected us, and I apologize for having called it by the old rule number. It is a 52 (c) motion and we believe that we fall within the rule.

"If during a trial without a jury a party has been fully heard with respect to an issue, and the court finds against the party on that issue, the court may enter judgment as a matter of law against that party on any [4-6] claim," et cetera, "that cannot under the controlling law be maintained without a favorable finding on that issue."

Now, the issue in question is fair use on the original complaint where Borland, notwithstanding the fact that the issue wasn't even in the case at the time and subject to our relevance objections, put in their complete evidence, no qualms about it, no reservations. They said, "This is it. We rest." So I think the motion, if I understand the rule correctly, is ripe, because they have put in everything they have on that fair use issue. And it's our position that this is an affirmative defense, it is their burden, and they have failed to meet it.

Now, your Honor's decision of yesterday, memorandum of yesterday, asked us to come in prepared to address the question of what standard applies under the federal rules, and that is a very interesting question. Between yesterday and today, looking at the cases quickly, we weren't able to find a lot of guidance on the point, but we did find some which we believe supports what was our logical assumption, and that is that the standard that applies on a 52(c) motion where there's no jury right implicated, there's no Seventh Amendment question, is not the old directed verdict standard of whether or not a reasonable jury could find to the contrary, but your Honor as sitting as finder of fact. Your Honor has heard all the [4-7] evidence from one side, the side with the burden. If your Honor having heard all of that evidence believes that they have failed to make out the defense, that's enough. It's a preponderance of the evidence standard. It is not—it is not beyond what a reasonable jury could find—you know, whether a reasonable jury could not find otherwise. It is not that there are undisputed facts as in summary judgment. I believe logically under the rule—and there is some, not a lot, but there's a little case support for it—that the standard is precisely that. It's a preponderance of the evidence standard.



So if your Honor evaluates everything they've put in on fair use on the original complaint, having rested, and your Honor is not persuaded that they have made out the defense, I believe that a 52(c) provides the Court with a vehicle for dealing with that issue.

Without putting us to the expense and without putting the Court to the waste of time of requiring Lotus to put in its case on fair use to rebut, which as I believe your Honor recognized when we were last here we have not done, and when one considers the timing of their raising of the defense, that isn't at all surprising.

Now, I would now move—if your Honor would like—I mean, we can talk more about the rule. I was prepared to move to the merits—

[4-8] THE COURT: All right.

MR. GUTMAN: —the merits of their fair use defense.

As I said, the burden is on them. It's an affirmative defense. I don't think there's any question under the case law that it's their burden to prove fair use, and they haven't done it here. Let's begin by looking at the four fair use factors. First, what's the purpose and character of the use.

I don't think there is any dispute on this record that the purpose is commercial, and it's not just vaguely commercial, modestly commercial, but this is the commercial activity of a direct and heated competitor. There's no argument that their purpose in copying the 1-2-3 menu, menu structure, macro language and keystroke sequences was scholarship or research. There's no argument that as in *Sega* it was simply for purposes of internal use or in *Coates-Freeman* where it was internal use, and in *Sega* where they persuaded the court that this was in fact the only way to understand, to learn the unprotected ideas in the program. And this was not for non-commercial home use which was what was at stake in *Galoob*, and that's the other case that they base this on. They place their heaviest reliance on *Sega* and *Galoob*. Neither helps.

In *Galoob*, the issue—the fair use issue was [4-9] whether this was a fair use for the people who were using the game

genie in their own homes for non-commercial purposes to speed up the play of the Nintendo game whereby so doing infringing Nintendo's copyrights in those games. And the only claim against *Galoob* that was articulated contributory infringement claim, and the court correctly ruled you can't contributorily infringe on something which is not an infringement by virtue of fair use.

So none of those arguments help them here. It's clearly commercial. And again, unlike *Sega* where the court said the commercial impact if any was minimal, here the commercial impact is clearly quite meaningful.

The record is full of testimony from both sides concerning the importance of the menus, the importance of macro compatibility. They offered it up as the justification—the purported justification for their behavior. "We had to do it because it was so commercially important." And they were kind enough to even cite testimony from our people, including from Jim Manzi, saying, "Yes, we consider compatibility to be an important issue and we're developing new versions of our own product."

So I don't think there's any question that on the first standard, which is the purpose and character of use, it is commercial, it is competitive, and as the Supreme Court has said repeatedly, that makes it presumptively [4-10] unfair. They lose unless they can show no adverse impact, no adverse economic impact on us, which is the fourth factor of the test, but the burden—at this point it becomes almost a double burden—is still on them.

The second factor to consider is the nature of the work. Now, here this is an issue that your Honor has, I think, dealt with in the summary judgment decision to some great extent. What's at issue here are the menus and menu structure of Lotus 1-2-3, keystroke sequences, and the macro language. The Court has already ruled that they are expressive. The Court has already ruled that they are protected with—I'll drop a footnote here for the fact that your Honor did leave open pending trial a question of whether there were limits on that

protection and whether certain elements or subelements might not be, but that this is fundamentally protected I believe was established in the summary judgment decision this past summer.

Now, Borland's argument on the nature of the work based on a misreading of *Sega* is essentially that fair use is a given or there's almost a presumption of fair use if what you're talking about is a computer program because that's a utilitarian work. That's not what *Sega* says. That's not even close to what *Sega*—to what *Sega* says. One may believe that *Sega* is good law or one may believe that *Sega* is bad law, and it still remains to be seen the [4-11] extent to which other circuits and the Supreme Court will ultimately feel that *Sega* is good law. But what *Sega* is certainly not is a declaration of open season in fair use on computer software.

The *Sega* court was quite clear to make it—to point out that they were talking about a very precise situation in which the copying was internal, in which the product that was ultimately sold did not contain any of the copied material and in which that copying done for internal purposes was basically akin to research, because under the very specific circumstances there this was the only possible way to learn the unprotected ideas in the work. A very narrow holding, and the court was very careful to make it such. So I don't believe that it stands for the proposition that Borland cites it for, that software is somehow suspect and easy to prove fair use.

The third element is the amount and substantiality of the taking. And at least of the courts—and I believe we've cited these cases in our memo on the subject, your Honor. They equate this factor, this standard, with the quantitative substantiality test, which is part of the copyrightability and part of the infringement test that your Honor has articulated well in this case. There's no question that the taking here was substantial. The menus, menu structure, macro language, keystroke [4-12] sequences. Again, I believe your Honor addressed that issue in dealing with the summary judgment motion this summer. This was not a trivial or de minimus taking.

Now, Borland takes your Honor's summary judgment decision this summer and argues that that proves that they win on that factor because your Honor stated that the standard is modest; that is, one need not show a tremendous amount in order to show qualitatively substantial taking. So they take that as saying, "Ah-ha. Well, your Honor held that in fact what was taken here was something very modest and therefore Lotus loses on the third standard." I don't believe that's a fair reading of your Honor's holding this summer and it's certainly not a fair reading of the record here. Again, the same evidence from both sides that they put in about the importance of these aspects of the program, including the importance of macro compatibility, proves that this taking was not insubstantial.

And then the final factor which in the words of the Supreme Court in *Harper & Row* is, quote, undoubtedly the single most important element of fair use.

Now, Borland says that's no longer the law. *Sega* changed all that. I'd be curious to know how the Ninth Circuit gets the ability to do that to the Supreme Court. But in fact if your Honor looks closely at *Sega* and looks closely at *Galoob*, the same language, the same principle, in [4-13] the Supreme Court decisions is quoted in each of the Ninth Circuit cases upon which Borland relies. This is the most important factor.

Again, *Harper & Row* goes on to say—and I'm reading at pages 2233 and 2234 of the Supreme Court Reporter edition: "Fair use when properly applied is limited to copying by others which does not materially impair the marketability of the work which is copied."

Same page: "More important, to negate fair use one need only to show that if the challenged use should become widespread, it would adversely affect the potential market for the copyrighted work." So it's not even necessary that the impact be immediate and present. Even the threat of a future potential impact is sufficient under the cases. And in this instance the *Harper & Row* decision is quoting from *Sony*, an earlier Supreme Court decision on the subject involving the



Betamax, which like *Galoob* involved contributory infringement for a home fair use.

All of the cases, your Honor, are to the same effect on this, running through *Sega*, running through *Galoob*, including your Honor's decision in *Coates-Freeman* where your Honor pointed out on page 887 of the Fed. Sup. that because Polaroid was given the chart and could not otherwise have bought a copy, its limited internal use did not even deprive Coates-Freeman of a sale to Polaroid, let [4-14] alone to any third party. So in the *Coates-Freeman* case where your Honor found fair use there was not even any evidence or any showing that even a single—so much as a single sale had been diverted or interrupted based on Polaroid's internal use of Coates-Freeman's work.

Now, again, they—they try to distinguish the cases that say that the fourth factor is the most important by saying, "Oh, well, these are artistic works. This is really different. It's a different standard when you're talking about something utilitarian." I would suggest to the Court that whatever one may think of the quality of president—ex-President Ford's writings, his memoirs were not—and indeed some might even argue that in certain aspects they might be fiction, but clearly the court viewed them as a historical work, as a work of non-fiction.

So the notion that this—that the importance, the overwhelming importance, the decisiveness in many cases of the fourth factor is somehow restricted to works of aesthetic art as opposed to works that—that involve non-fiction or involve utilitarian works is a distinction that they have made up and that is nowhere supported in the case law, including the Supreme Court case law.

Now, what have they put in on this fourth factor where they have the burden in order to demonstrate that there's been no adverse impact on us? All they've offered [4-15] is a couple of items, a newspaper advertisement, an excerpt from a speech from which they argue that Lotus had a 70 percent share of the spreadsheet market before they started infringing.

Lotus still had a 70 percent share of the spreadsheet market as of this summer, so obviously they've had no effect.

Now, even if one credits those statements that they rely on well beyond what they're worth and we leave aside the questions of whether they're comparing apples and oranges and whether one is talking about units and the other is talking about dollars and whether they are approximate or whether they are even remotely accurate, and even if we leave aside the fact that they don't address the question of, well, what happened in the meantime, were there years during the period when they infringed when they had a very substantial market share taking at our expense, none of which are suggested by the flimsy proof they've put in, the answer is, so what. The question isn't whether our market share is what it was before they started infringing. The question is, have they injured us in any meaningful way. And how can they deny that they have? There's certainly nothing in the record to suggest or to prove that they have not.

They acknowledge that we compete. Do they really contend that none of the sales they've made since 1987 have [4-16] been at Lotus' expense, that they're in the Coates-Freeman situation where not a single sale was lost? They have a non-trivial market share. I think if we had to, we could quite easily prove from their mouths claims of nine percent, twelve percent, 24 percent, 30 percent, depending on the time and depending on what suited their purpose at the time.

Now, where did all of that come from? Is it really the case that none of that market share came from us, none of the sales came from us? That when their salesmen and ours every day go head to head in corporate accounts saying, "Buy my product, don't buy theirs," that they've not won a single one of those fights? If that's the case, they have not proven it, and they have to, and they've failed. If that's what they're really arguing, your Honor, they have a very strange notion of competition.

The bottom line is, they don't have to win the competitive battle. They don't have to drive us out of business. They don't

even have to knock our market share down in order to lose on fair use. The test is whether there's any non-trivial, any significant economic impact, and they have not come close to meeting that standard, not even close.

I don't think I could say it any better than Judge Leval did in the *Texaco* case in which he wrote, quote: "In order to prevail on the fourth factor, the copyright [4-17] owner is not required to demonstrate that it has been reduced to poverty by the defendant's copying." He continues: "The fact that the copyright owner is realizing rich profits from the exploitation of its copyrights despite the unauthorized copying has no logical tendency to prove that the secondary user's copying is not diminishing those profits. If the copyright owner would be receiving significantly higher revenue but for the defendant's uncompensated copying, the standard is satisfied regardless of revenues already being received." And they have failed to prove that but for their premise and infringement we would not be doing better, however it's measured, whether it's sales, whether it's market share, whether it's units, whether it's dollars.

If your Honor were to find fair use here on this record, I would respectfully submit having I believe fairly thoroughly canvassed the case law that this would be the first instance in history in which the use in the ultimately sold product of infringing material by a direct and vigorous competitor was excused as fair use. That's not what happened in *Sega*, that's not what happened in *Galoob*, and I've not found a case anywhere and they've not cited anywhere that kind of use by a direct competitor was excused as fair use. Thank you, your Honor.

THE COURT: Thank you.

[4-18] MR. GELHAAR: Your Honor, I will address the procedural aspects of the present posture of the motion and Mr. Reback will address the substantive aspects of that motion.

Mr. Gutman stated that Rule 52(c), he believes, is a proper vehicle to dispose of Borland's affirmative defense of fair use, and I am troubled by that. I have to also admit that I was

not entirely familiar with Rule 52(c), and after reading the Advisory Committee notes last night, it appears that it was indeed broadened to address claims by plaintiffs and defendants as opposed to the old 41(b) rule which only was against plaintiffs after the close of their case. But the rule was broadened as to both parties only insofar as the Court can enter judgment against a party concerning a claim, counterclaim, cross-claim or a third-party claim.

Now, reading the rule: "If during a trial without a jury a party has been fully heard with respect to an issue and the court finds against the party on that issue, the court may enter judgment as a matter of law against the party on any claim, counterclaim, cross-claim or third-party claim that cannot under controlling law be maintained or defeated without a favorable finding on that issue."

We're talking about an affirmative defense here. [4-19] Borland has not asserted any claim, and "claim" it seems to me must be read in the Rule 12 sense, like as if a failure to state a claim. It's not—the word "claim" is not used like claim, the assertion of something, but actually a claim which Borland has not—has not asserted in this case.

I could only find one case—

THE COURT: Well, let me just call your attention to another rule, 42(b). "The court, in furtherance of convenience or to avoid prejudice, or when separate trials will be conducive to expedition and economy, may order a separate trial of any claim, cross-claim, counterclaim or third-party claim, or of any separate issue or of any number of claims, cross-claims, counterclaims, third-party claims, or issues, always preserving inviolate the right of trial by jury."

Now, I think this would probably be inherently in the power of the court anyway if the rule didn't say that, but the rule says it. And I have ordered phased trials in this case, and I have included in my orders that the issue of fair use, whatever it is, would be tried in this proceeding and have given notice to Borland that it was being tried, and Borland has understood that and has offered its evidence on the subject.



Now, quite apart from whether there is any substantive difference as distinguished from change of [4-20] terminology between Rule 41(b) and new Rule 52(c) which became effective with the amendments that now apply to the trial of this case, I take it everybody agrees, quite apart from that I have said to you, I want this issue dealt with in a way that doesn't waste the resources of the parties.

Now, why should I be going beyond the present point before I hear your arguments on the merits as to what findings I should make on this issue and whether either as a matter of law or by making findings by a preponderance of the evidence on the evidence before me when Borland has had its opportunity and tells me, "We rest. We've offered everything we want to offer on the subject"? Why shouldn't I be deciding it now instead of wasting the resources of the Court and the parties and saying, "No, no, I can't do that till the end of the trial." Why?

MR. GELHAAR: If I might your Honor, if I can just address the question just preceding that one, and that is, after you read Rule 41(b)—42(b) rather, I see actually a difference in the language between 42(b) and 52(c). In fact, 42(b) preceded 52(c) and they're written differently. So it seems to me that—that one would infer that the drafters had a different intent. But you know what, your Honor—

THE COURT: Well—

MR. GELHAAR: —I'm not going to argue with [4-21] you.

THE COURT: Well, wait a minute. I'm putting to you a broader question now.

MR. GELHAAR: I think the Court actually—

THE COURT: Hold it. Suppose I don't have authority under 52(c). I have told you I had to invoke whatever authority I have to avoid a waste of the resources of the parties and to the public, and I want to hear the issue now. So do you say I don't have that power? If so, you've got to tell me I don't have it under 42(b) as well as that I don't have it under 51(c).

MR. GELHAAR: I don't believe the Court has the power under 52(c).

THE COURT: I'm sorry. I don't want the record to be confused by my misstatement of a rule number.

MR. GELHAAR: But the Court may, but I think not, have the power under 42(b), but I think the Court might have power under 12(f), because the Court may sua sponte move to strike a defense at any time during the proceeding.

THE COURT: Okay. All right. So if I have the power, I'm invoking it. I've told you that before and I'm telling you again right now.

MR. GELHAAR: But the Court has said in this case from the beginning that we're only going to try it once, and if it goes to the First Circuit, you want a full [4-22] record before the First Circuit so the First Circuit can decide all issues.

As I understand it now—I'm slipping a little bit into Mr. Reback's area, his argument, but there are cases in the Court of Appeals which say that the Court of Appeals upon considering the fair use defense can consider that defense de novo. Now, if Borland simply has its proof before the Court and the Court enters judgment on this issue, or does whatever it wants to do, strikes the affirmative defense, then the Court of Appeals has only heard Borland's side of this.

THE COURT: Well, of course. And so the only person who could complain then would not be Borland, who is trying to complain about it, but Lotus, who is not complaining.

MR. GELHAAR: But, your Honor, we're going against what you've stood for. I don't mean exactly that, but what you've said over and over again, we are only going to try it once.

THE COURT: Yes.

MR. GELHAAR: Why shouldn't I—

THE COURT: Yes, yes. But, Mr. Gelhaar, that doesn't mean that I carry that point to the extent that every time somebody says, "I've got an argument" I don't even evaluate that argument before I decide to spend several [4-23] days hearing evidence that would be relevant to it. I evaluate it. If my conclusion is when I evaluate it that once I make these findings there is no chance that this case will have to come back on this subject because I didn't let you hear Lotus' evidence—

you're complaining about Lotus not being allowed to offer additional evidence. What basis do you have for complaining about that?

MR. GELHAAR: But, your Honor, I think you're inferring that Lotus may well have some expansive proof that they would proffer on the fair use argument—

THE COURT: I don't care how much it is. An hour of this Court's time at \$16,000 a day in taxpayers' cost is a waste of public resources as well as when I see the number of lawyers around this courtroom and how much it's costing the parties in attorney's fees, a considerable waste of private resources. One hour of time shouldn't be wasted here.

So now I come then to the bottom line proposition again. If I have the power to hear this issue and decide it now, I want to do it. It makes sense from every point of view, including another rule we haven't spoken about thus far, Rule 1: just, speedy and inexpensive determination of every action on the merits. That's what I'm aiming for.

So if I have the power, shouldn't I exercise it? Are you telling me no?

[4-24] MR. GELHAAR: I'm telling you, your Honor, that you should not exercise it unless you hear what Lotus has to say on it so as to avoid having to come back—

THE COURT: Tell me—

MR. GELHAAR: —down here a second time, assuming your Honor—

THE COURT: Cite to me any authority for the proposition that Borland has standing to complain because I'm not hearing Lotus.

MR. GELHAAR: Your Honor, the authority that I would offer to you is your prior hearings; and that we also intend—and we're not interposing this argument for delay, by any means.

THE COURT: Well, that's a misinterpretation of my prior hearings, but even if it were a correct interpretation, I always have the power to correct my prior errors before they get up to the Court of Appeals, as long as the case is still before me.

So you have misinterpreted what I have said in prior hearings. But even if you were correct, I would correct myself now and say I should exercise this power now.

MR. GELHAAR: Your Honor, Mr. Reback is pulling at my coat and that means either that I should not argue with you any further or that he is dying to get up to address you.

[4-25] (Laughter.)

THE COURT: Whichever of those reasons—

MR. GELHAAR: But in either event, I will submit to his coattail pulling and I will sit down.

THE COURT: All right. Thank you.

MR. REBACK: I just thought, your Honor, that I should be the one to continue to go forward because Mr. Gelhaar was kind enough to research this point and articulately present our opinion—position, rather. We do understand your Honor's point and the logic behind your Honor's point, so I'm going to proceed to address what I'll call the merits of our argument here. Before I do, I have one unrelated question with regard to the memorandum of yesterday, if I might just ask about that, sir.

At the top of page 2—and I may just be making too much of this, but at the top of page 2, the first sentence reads: "The parties have presented their evidence in a non-jury trial on the liability issues for the original complaint and are about to present evidence on liability issues for the supplemental complaint."

It just may be an issue of drafting here, sir, but the only thing that we had waived jury trial to were the three issues for Phase I, and that's all we put in evidence as to—at the last phase of trial.

THE COURT: Yes, we understand that.

[4-26] MR. REBACK: All right. Thank you, sir. So the record is clear here for the purpose of the argument—

THE COURT: You're not suggesting that you're entitled to a jury trial on this issue we're now talking about.

MR. REBACK: The Key Reader issue, your Honor?

THE COURT: The fair use issue.



MR. REBACK: The fair use issue? No, sir. I'm not arguing about that. I'm arguing that I was entitled to a jury on the other—the other issues as to which I did not waive a jury.

THE COURT: Absolutely.

MR. REBACK: Okay. So the record is clear here, we raised the fair use defense as to the case in chief in our pretrial brief prior to the last session, docket number 311 at page 56. Your Honor was kind enough to permit me to argue the fair use issues last time and I will go over them briefly with particular emphasis on points that Lotus has made in briefing, and I will not repeat in—in totality the arguments that I made last time. I'm sure your Honor will consider those arguments in consideration of this issue.

I do want to point out as a preliminary that the statute, the case law, the legislative history indicates that the Section 107 issues are to be evaluated and weighed [4-27] by the Court, however the Court believes it's appropriate, and they are not an exhaustive list and the Court can take into consideration whatever it believes appropriate in assessing fair use in a particular situation, including this one. But the statute does lay out four factors, and I would like to address those factors, because Mr. Gutman has done so.

The first factor is the purpose and character of the use. And we have argued, your Honor, that virtually all uses have some commercial effect, but we've argued that that alone is not dispositive.

We argue that *Sega* and *Galoob* teach that that's not a binary decision, yes or no, that it's a matter of degree. Now, Lotus tries to distinguish *Sega* and *Galoob* by arguing that in those cases the defendant's product didn't compete directly with the plaintiff's product, and I want to say, your Honor, that I don't believe that that's correct, and let me start with the *Galoob* case as an example.

In the *Galoob* case, the defendant made a piece of hardware called the game genie and it allowed users of Nintendo software to enhance that software so that they didn't have to buy enhanced versions from Nintendo.

So, for example, to pick a name of one of these games, Super Mario Brothers I, if you had that, you could buy the game genie from Galoob, and you wouldn't have to buy [4-28] Super Mario Brothers II from Nintendo or Super Mario Brothers III, or any other games at an enhanced level from Nintendo.

Now, Nintendo didn't make a competing product with the game genie, but Nintendo argued that the game genie competed directly with the enhanced versions of its video games and indeed Nintendo argued it destroyed the market for those video games, and yet the court still found fair use. The game—

THE COURT: Well, are you suggesting, however, that the court found that the opposing argument was factually supported or wasn't it simply finding otherwise instead of accepting that supporting argument as factually supporting that—the argument that this would wipe out the market?

MR. REBACK: Well, the issue came up—I'm not sure I understand the question, sir.

THE COURT: Well, the way you stated the proposition, it sounded as if the court had accepted as factually correct the contention and wouldn't have to do that.

MR. REBACK: No. I understand your Honor's question. It wouldn't have to accept as factually correct the contention that the enhanced version would destroy—that the game genie would destroy the market for the [4-29] enhanced version, but it did accept as factually correct the fact that people bought the game genie instead of buying enhanced versions of Nintendo products. That—that was my only point. Nintendo code was present in the game genie, and—and so I would respectfully argue to the Court there are a number of dimensions of that case which bear consideration here, and I would argue the same is true of the *Sega* case.

In *Accolade*, the defendant in that case copied computer code software in the Sega console in order so that it could make games to compete with the Sega games, and it did that without getting a license from Sega. But fair use was still

found notwithstanding the fact that there was commercial impact on Sega's sales of the games.

Now, in both cases the defendants made money on the sale of their products and sold them for commercial purposes just as Borland sells its spreadsheet for commercial purposes, but we respectfully argue that that's just not dispositive. It's a matter of degree, and we would ask your Honor to take that into consideration.

Now, Lotus attempts to distinguish *Sega* by saying in *Sega* there was proof that what the defendant Accolade did was the only way to do something. There was proof or the court found that the only way Accolade could make a Sega compatible game was to copy the Sega code. Accolade could [4-30] clearly make—it did make other video games. They made games for Nintendo or Atar—or Commodore or Atari or other systems, but they couldn't make a Sega compatible system without the Sega code, much the same kind of argument we have here. You can't make a Lotus compatible spreadsheet without the Lotus menu command hierarchy. So we argue that those cases have dimensions which should—should help formulate the way we approach the problem here.

And we—we look to *Galoob*, because *Galoob* says that you should in the first instance in a case like this look to what the consumers do. Did they pay for the right to run their programs in the *Galoob* case? And we would ask the same question here. Did consumers pay for the right to run their macros on whatever spreadsheet they want to run macros on, and we—we would suggest they did pay for that and for that reason we think the case has applicability here.

The last point on the first factor, both *Galoob* and *Sega* emphasized in consideration of the first factor that the defendant performed substantial creative work of its own, and we would argue the same is true here on the record and the court has so found.

Now, I guess—I would say one more thing about the first factor. In *Sega*, the defendant clearly copied computer codes. Courts may disagree about whether the menu [4-31] com-

mand hierarchy is copyrightable or not, but there is no dispute in the case law as to whether computer code is copyrightable, yet *Sega* copied that—Accolade copied that and yet there was no infringement, there was still fair use, and the *Sega* court said that was because it was used to create new works, and we—we would respectfully ask the Court to consider that as well in the Court's consideration.

Now, the second issue—the second fair use issue in the statute is the nature of the work. And what I distill from Lotus' brief on this point is because we took copyrightable expression, Lotus argues in its brief there is no fair use, but if that was the case—if that were the case, there would never be fair use. Fair use only applies when copyrightable subject matter has been taken, and yet the court uses fair use in various cases to find no infringement. And I would argue, your Honor, the reason the court does that is because of the court's concern about expanding the copyright holder's monopoly, and that's what's going on in these cases and that's why the second factor is so important for functional works.

That's why *Sega* says it's the most important for functional works. It's not contradicting the Supreme Court. The legislative history says that these factors are to be evaluated according to the case and what's at issue, and *Sega* says when functional utilitarian works like computer [4-32] programs are at issue, the second factor is the most important. *Sega* says that utilitarian works like computer programs get only thin protection and that fair use should readily be found for computer programs and similar works, and, finally, the copyrightability—I'm sorry—the compatibility should be considered in evaluating the second fair use factor.

As I pointed out last time, and I won't go back into detail, in support of these propositions, *Sega*, *Baker vs. Selden* and *Altai*, many of the cases we've argued to this Court on the 102(b) proposition, and I—I do not intend to reargue them here but merely to ask the Court to take those cases into con-



sideration as the *Sega* court does in evaluating the second factor.

The third factor is the amount used. I think both parties are in agreement that the Court has made a decision. Certainly there's no issue as to trial or proof as to the amount used, it's already in the record, and there's only an argument as to which way the Court's holding tips the scales. The Court has made determinations as to how much was used. The Court has said, as Mr. Gutman pointed out, more than a trivial portion was used. We say that's neutral on that factor, but we leave that to the Court.

And so I come to the fourth factor, the [4-33] supplanting the demand test. The fourth factor deals with the effect on the market. And we argued there that when the Court is assessing the effect on the market, the standard is supplanting the demand for the original product. Is the market usurped by the defendant's product? And we cited in our brief *Sega* and *Galoob*, but that's just not the *Sega* and *Galoob* standard. It's the standard everywhere.

And I'd like to read into the record just a couple of citations from the Second Circuit also adopting the same standard. The first is *Consumers Union vs. General Signal Corporation*, 724 F.2d 1044, at 1050 through 1051, Second Circuit, 1984, and the more recent Second Circuit case, *Wright vs. Warner Books*, 953 F.2d 731 at 739. That's a Second Circuit case from 1991. And the point here is that when courts are talking about the standard, they say that the defendant's work may, their word, suppress the demand for the original work, but unless it usurps that demand there is no fair use. Now, Lotus cites primarily a—

THE COURT: Unfair use—

MR. REBACK: I beg your pardon, your Honor?

THE COURT: You said unless it usurps a demand there is no fair use?

MR. REBACK: You're quite right, your Honor. I misspoke. Unless it usurps—I appreciate that, sir. Unless it usurps the

demand, there can still be fair use [4-34] under the fourth standard.

Now, Lotus argues to the Court that a different standard should apply citing this case from New York. We would argue that that case—that Lotus is taking dicta from that case out of context. That case and the other case that Lotus cites for a different standard are cases in which what the defendant was distributing was an absolute identical copy top to bottom of the plaintiff's product. And what the court is saying in that situation, we don't have to go through a complicated analysis of the effect on demand of the original product, because the effect is obvious. Most assuredly, the District Court judge in New York did not intend to overrule the Second Circuit on the issue of standard.

So we think that the record is clear here under the supplant of the demand standard as to the effect of Borland's product on the market for Lotus' spreadsheet. There was absolutely no effect on market share. We have three separate data points, and they all come from Lotus. They don't come from us.

THE COURT: Let me —

MR. REBACK: The first data point already in the record—

THE COURT: Let me pause there. I don't understand what you're saying to me there.

[4-35] Isn't it correct that the question that I should be thinking about in this respect is not what was the Lotus market share at two different points of time, but what is the Lotus market share after this alleged fair use, and what would the Lotus market share have been if this alleged fair use had not—its conduct alleged to be a fair use had not occurred?

MR. REBACK: No, sir. I would disagree with that point. May I address that?

THE COURT: Well, now, this is essentially the same point Judge Leval was making, that whenever we are thinking about whether there has been harm or damage, we have to compare a factual circumstance, what did happen with what would

have happened if the alleged harm-causing event had not occurred.

Now, that's just fundamental law of causation all through the law, not just peculiar to this area. So you're telling me that I should disregard that fundamental principle that runs throughout the law of causation in all areas of the law and hold here that instead of comparing what has happened with what would have happened if the alleged harm-causing event had not occurred, I should just look at two different points of time as to what did happen.

MR. REBACK: Actually to make the record clear, it's three different points of time, beginning, [4-36] middle and end, but I will address your Honor's point.

Your Honor's characterization of my position—I don't want to be forced into this extreme notion that I'm arguing against the totality of the law of causation everywhere, but I am arguing against your Honor's application of that notion here.

THE COURT: Well, that's what I'd like to understand, because I don't understand why I should apply a different rule of causation here from the one that I apply in all the other areas of law that I have to judge.

MR. REBACK: Okay. Let me address that. The reason we have a supplant the demand test, the reason we look at what happened, what actually happened as opposed to what might have happened in the absence of the event is because of the—it goes to the fundamental purpose of copyright. The purpose of copyright is not for the benefit of the copyright holder. It's for the benefit of society. So we don't ask the question, is the copyright holder hurt in some general or remote sense.

THE COURT: Well, if we're thinking about the benefit to society, we think about what would have happened and what did happen, because the benefit to society is one that we can only determine by making this comparison. There are of course multiple other factors that affect what is the current market share and the comparison with what it was at [4-37] some point in time past.

MR. REBACK: Yes, sir.

THE COURT: You agree to that?

MR. REBACK: Well, I certainly agree that market share is determined by a lot of different things.

THE COURT: All right. So you're asking me to assume that none of all of those other things had any effect here—

MR. REBACK: No, sir.

THE COURT: —and only this one thing?

MR. REBACK: No, sir. All I'm saying to you is what was done did not supplant the demand. Let me complete the argument, if I might, on this point.

This goes back to Judge Breyer's very famous speech to a congressional subcommittee where he said that the purpose of copyright is to give no more monopoly than necessary to get the work out in the first instance. The point is not is the copyright holder hurt a little or is the copyright holder hurt a lot. The issue is, is the demand supplanted because the purpose of copyright is the proliferation of works. And if someone takes—

THE COURT: Well—well, wait a minute. But you see, you're missing another point. The issue is, is the public interest affected a little or not at all or a lot.

MR. REBACK: All right.

[4-38] THE COURT: And so that's the same kind of causation question.

MR. REBACK: I don't think so, sir, because in copyright law I would respectfully argue to the Court the purpose as articulated by Judge Breyer is that the public interest is served when there's just enough monopoly to get the product out in the first instance. And so if Lotus still holds a 70 percent share, and held it consistently notwithstanding these activities, they don't meet the fourth requirement. And that's our argument, sir.

And so I would respectfully disagree with the reading of Southern District of New York case, and I would argue that there is a specific reason why there's a supplant the demand test, and I would specifically argue we do not look to what



might have been. We look to what actually happened. And since what actually happened was no harm, then there's no foul. That's the argument.

THE COURT: But it's no harm from conduct, and harm from conduct has a connective element to it, a causation feature to it. So you're asking me to disregard that causation feature entirely, are you not?

MR. REBACK: I don't—I have difficulty adopting a question which asks about entirely, because my mind is just not as quick as the Court's is. My problem is—but I think I can agree with what you're basically [4-39] putting to me, which is that if Lotus—if Lotus would have had a hundred percent share of the market but for the conduct of Borland, that is not the test. If Lotus could have extracted monopoly profits on the sale of its product by charging consumers \$5,000 for it but for the competition provided by Borland, that's not the test. And I go back again to the purpose of copyright. It doesn't confer that kind of monopoly.

THE COURT: Hold it. How is the—what's the statutory phrasing with respect to the fourth factor?

MR. REBACK: Give me a moment, your Honor, and I'll—

MR. GUTMAN: Your Honor, it's in Section 107. It reads, quote: "The effect of the use upon the potential market for or value of the copyrighted work."

THE COURT: Now, that doesn't say supplant.

MR. REBACK: No, sir. That's what the case law says—

THE COURT: Well—

MR. REBACK: —in interpreting what—you're quite right. Supplant is not in here. Neither of the issues—

THE COURT: Well, if that—

MR. REBACK: Neither is suppress.

THE COURT: Well, if that's what the case law [4-40] says, isn't the case law a gross departure from the reading of the statute?

MR. REBACK: No, sir. No, sir. The case law interprets the statute in light of the history and in the context of the copyright law as a whole. That's the reason the case law has come

to the position that it has. So I do I think that this presents squarely a legal proposition to the Court, and I certainly would agree that the—

THE COURT: Now, that is inconsistent with the argument you started out with that I must consider and weigh all four factors, no one is decisive.

MR. REBACK: I'm sorry, sir. I do not mean to say that the Court's conclusion on this factor is decisive, and I didn't mean to state that if indeed I did.

What I meant to say is, the argument about what further discovery or evidence is necessary on the fourth factor is disposed of by your Honor's conclusion as to what the fourth factor means legally. In other words, if the proposition is that the—what the fourth factor means is that all Lotus has to show is that there is some indirect harm, that a single sale was displaced, something like that, then most assuredly they can show that, most assuredly they can, and I would concede that point.

If, on the other hand, we are correct and the standard means what it says in the case law and it means [4-41] supplant the demand—

THE COURT: Now, notice that you have stated two extremes as my only options for interpreting that statute, no harm or just a little harm.

MR. REBACK: I didn't even get to state —

THE COURT: The point —

MR. REBACK: I didn't even get to state the second extreme.

THE COURT: —there's a whole intervening middle there that's open to me as a reasonable reading of the statute, isn't there?

MR. REBACK: Not if your Honor wishes to be consistent with the Second and Ninth Circuit case law.

THE COURT: As you read them.

MR. REBACK: Yes, sir, and as your Honor's reading of those cases, which is controlling in the court and not mine. That's certainly the case.

THE COURT: Well—

MR. REBACK: But I would respectfully argue to the Court that the Second Circuit and the Ninth Circuit set up a standard, and that standard is well accepted nationally, and that standard is suppress the demand. And any lesser standard I—I would respectfully argue to the Court is—

THE COURT: Well, wait a minute.

[4-42] MR. REBACK: —inconsistent with the totality of the copyright—

THE COURT: You said suppress. You've previously been saying supplant. Suppress is not the same as supplant.

MR. REBACK: Okay. Your Honor is correct. The test is not suppress. The test that I am arguing for as articulated by the Second Circuit and Ninth Circuit is supplant the demand. Sometimes I talk too rapidly and get ahead of myself, and I appreciate the correction, your Honor.

If your Honor please, just give me a moment to—

THE COURT: Surely.

MR. REBACK: I do want to go over the three data points so at least the record is clear, and I want to do that because at the time we originally filed our memorandum and opposition to Lotus' motion for directed verdict, they had designated as confidential the first data point. That's the reason your Honor—so I want to hand up to the Court now—because they have down-designated that, so I'd like to hand up to the Court now the unredacted version which is now of record so I can make the record on the three data points.

THE COURT: You may.

MR. REBACK: This replaces docket number 342.

[4-43] THE COURT: All right.

MR. REBACK: All right. The three data points.

THE COURT: Wait just a minute now, Mr. Reback.

MR. REBACK: I beg your pardon, sir.

THE COURT: Wait just a minute. Let the clerk mark it and let me look at it.

MR. REBACK: What we have tabbed on the side, your Honor, are the places in the brief where there was prior redaction.

MR. GUTMAN: Your Honor, might I ask if there's a copy for us from Mr. Reback?

MR. DETKIN: You've already been served with that, Mr. Gutman.

THE COURT: I'll let you see it in a moment, Mr. Gutman.

MR. GUTMAN: Thank you, your Honor.

(Pause - Court is reading.)

THE COURT: All right. You may examine the document.

MR. GUTMAN: Thank you, your Honor.

THE COURT: You may proceed.

MR. REBACK: Thank you very much, your Honor. Okay. Three data points.

[4-44] First data point: 1988, right after the original Quattro product was released, Lotus said in its speech to its own troops that they had a 70 percent market share and that if they maintained that 70 percent market share through the end of 1988 they would be, in their own words, home free. And they said at that speech that they shouldn't worry about who had the remaining 30 percent because that should not be of concern.

Second data point: October 17th, 1990, Mr. Manzi made a speech on the very same day that Quattro Pro 2.0 was released, and he said that Lotus still had a 70 percent market share.

Third data point: August 13th, 1990, two weeks after we pulled the Lotus compatible menus for the product, Lotus announced in a full-page ad in the Wall Street Journal, the New York Times, that they still had a 70 percent market share of units, to address Mr. Gutman's point, an 80 percent share of revenue. So I would respectfully argue to the Court that by their own admission they were home free.

Last point, your Honor. I've gone through the four factors. As we have discussed here today and as your Honor permitted me to discuss last time, this is—we are directing the Court



basically in equity on this point and the Court is free to consider whatever it deems appropriate, [4-45] and I would ask the Court to consider the implications of public policy here as I did last time, the fact that reasonable minds could differ on the protection of the menu command hierarchy, and as I will argue tomorrow in the Key Reader phase, that the menus are used only in a utilitarian sense and not in an expressive sense in the product. Thank you very much, your Honor.

THE COURT: Thank you.

MR. GUTMAN: Your Honor if I may just respond very briefly on Mr. Gelhaar's procedural point, I, too, paused on the point he did in reading 52(c) last evening and the fact that it doesn't expressly reference defenses, but I think in terms of the procedural context of the case now that needn't disturb the Court, and if I can have one second I'll explain why.

We have now tried both sides of every issue, both on our claims and on the defenses to our claims for Phase I. The only exception is this fair use defense. So if your Honor in analyzing everything that we did in February concludes that we have proven our claims in the original complaint and that they have failed to prove any of their affirmative defenses that were fully litigated to that original complaint, and the only thing left is fair use on which they have put in their case and rested and we have not put in a case, that we are precisely within the confines of [4-46] 52(c), because findings on that fair use point made by your Honor at that point would put your Honor in a position to resolve a claim, namely our claim on the affirmative—on the Phase I trial on the original complaint.

And although the rule is not cited, I believe that something like that is what—the *Coates-Freeman* case in rereading it last night, your Honor, it appeared, although your Honor did not cite Rule 52(c), but that was what was done there based on the proffers of proof by the parties. It was not a summary judgment decision, but your Honor entered what was described there as an interlocutory judgment, because I take it there were other issues that weren't resolved. So I suggest

that there's no difficulty even without resorting to these other rules, and if your Honor feels the need to resort to other rules, I would add Rule 16 to the list. I think it's clear that you can fit this within 52(c) without having to look at anything else. And I took it as very significant that Mr. Gelhaar did not quarrel with the proposition that the standard your Honor applies under 52(c) is preponderance of the evidence and not some higher standard.

Now if I may move briefly, very quickly to the merits arguments that Mr. Reback made. I think he's misstated *Sega*. He's misstated *Galoob*.

In *Galoob* what the game genie did was not what [4-47] further enhanced the program by Nintendo. The game genie speeds up Super Mario I, Super Mario II, Super Mario III. I could call one of my sons as an expert witness if that were necessary. It has nothing to do with replacing or supplanting or suppressing or influencing the needs of those other products. What the court found significant there was that Nintendo did not have any proof that they indeed had foresworn ever going into this enhancement market.

And one important distinction between that case and this is because the fair use analysis in *Galoob* was not on *Galoob* which made the game genie. It was on the users in their homes who bought it and used it to affect the Nintendo product. That was not a commercial use and, therefore, unlike *Borland* here, which has the burden on the fourth factor, Nintendo had the burden on the fourth factor because it was not a commercial use. If it's a commercial use under the first factor, that puts the burden under the fourth, and in the *Galoob* case, the burden—

THE COURT: What difference does it make where the burden is? The burden only decides the issue where the court or fact finder is in balance and can't make a finding by a preponderance of the evidence.

MR. GUTMAN: And I—and I would certainly hope that that is not relevant here, your Honor, so let me move—let me move to *Sega*.

[4-48] In *Sega* the court—first of all, this was only intermediate copying. There was no copying reflected in the final product. The Ninth Circuit made that abundantly clear, and as they were analyzing all the factors that Mr. Reback's referred to, they made that clear, and if one reads it out of that context, one is seriously misreading *Sega*.

Second, the court in *Sega* found that the commercial aspect of the use can best be described as of minimal significance. This is at the top of page 1523. There is no—I would submit that no such finding could be made on the record here.

Finally, this—this notion that there is a supplanting standard—I have read and reread all of these cases, your Honor, and I can't find it. The only case that talks about supplanting is *Harper & Row* in the specific context of the Time magazine use, supplanting—I'm sorry, the Nation magazine use—supplanting the prepublication rights which Time magazine had paid for and which resulted in Time magazine getting \$12,500 back, which I suggest is probably less than the damage they do us—do to us every day they infringe. Because of the prepublication, that was supplanted. But neither *Harper & Row* nor any other case, not in the Ninth Circuit, not in the Second Circuit, nowhere, says that supplanting is the standard that must be met.

[4-49] And, again, if I can read from *Sega*, same page, page 1523, after quoting *Sony* for the proposition that we must of course inquire whether if the challenged use should become widespread it would adversely affect the potential market for the copyrighted work, they quote—the Ninth Circuit quotes their own decision in the *Hustler* case, quote: "by diminishing potential sales, interfering with marketability, or usurping the market." Interfering—and this is—interfering with marketability, diminishing potential sales or usurping the market. That's how the Ninth Circuit states the test in the *Sega* case. So I don't know where the supplanting comes from, but it is certainly not the test. It is certainly not the minimum that must be established in any court anywhere.

Last point on market share. If I may just suggest to the Court a hypothetical which I find helpful in dealing with the argument by my brother that if our market share was 70 percent before they started infringing and our DOS market share—and that's a detail he left out of the ad—was still 70 percent as of this summer, let us take a hypothetical which is probably not very far from the truth.

Let us assume that in 1987 when we had that 70 percent market share we were selling Lotus 1-2-3 on average for \$300 a copy, and let us assume that in order to still have a market share several years later of 70 percent, after [4-50] having had to compete during that period of time with somebody selling an infringing copy of our work for a much lower price, we are now still selling 70 percent, but at an average price of a hundred dollars a copy or a hundred fifteen or a hundred twenty, or whatever it turns out we could prove it was. I would suggest to your Honor that by any measure that is a serious injury, a serious injury, and it is something that this superficial approach to market share numbers completely overlooks. Thank you.

MR. REBACK: Your Honor, just one point. I would like to read into the record a quote from *Sega*, 977 F.2d, 1253—I'm sorry, at page 1523. "A use"—quote: "A use that effectively usurps the market for the copyrighted work by supplanting that work"—and I'm going to go out of the quotation now. The court says that that may not be the fair use. Then, quote: "The same consequences do not and could not attach to a use which simply enables the copier to enter the market for works of the same type as the copied work."

We have some other quotations from cases using supplant on page 20 of our brief, your Honor, docket number 342.

THE COURT: All right. Let me speak first briefly about the interpretation of Rule 52(c).

I confess that as a member of the Standing [4-51] Committee on Rules of Practice and Procedure of the Judicial Conference I did not notice this curiosity of the drafting as it went through the process before it was adopted effective



December 1st, 1991, but I do note even now that the rule starts out with a phrase that was sort of lost in our discussion earlier today. The starting phrase is, quote: "If during a trial without a jury a party has been fully heard with respect to an issue."

Now, it is true that "issue" was dropped out in the later language of the rule. But even apart from the other sources of authority to which we have referred in our colloquy earlier today, it seems to me I should read Rule 52(c) alone as authorizing me to hear and decide as fact finder making partial findings an issue at this point and tell everybody we're not going to hear further evidence and argument on this issue even though I may not be in position to order judgment on a claim or defense, et cetera, until I have completed the rest of this trial.

So for that reason, in addition to all the other sources of authority, it seems clear to me that it's entirely appropriate for me and would be appropriate for me to be doing it at my own initiative, and I am giving you notice that that's what I would be doing. It's also appropriate to treat it, it seems to me, as being before me for ruling under the motion by Lotus when Borland has [4-52] presented all the evidence it proposes to offer on this issue. So I proceed to decide this issue at the present time.

I find by a preponderance of the evidence that Borland's use of copyrightable elements of Lotus 1-2-3 was not a fair use. Now, that of course is my ultimate finding of fact by a preponderance of the evidence. I reach that after consideration of all of the factors, and I will speak further in stating some supplemental findings that support that ultimate finding.

Before I go to those supplemental findings, let me say also with respect to an issue of law that I accept Borland's point that a factor analysis in weighing is required under the terms of the statute, 17 United States Code, Section 107, and therefore I am not making any legal or factual determination that any single factor is alone controlling. Even if that might be a possibility with respect to some of these factors, I need not

address that question in the present circumstances because I at least find that there is no single factor here which would be decisive in favor of Borland, and having made that determination I need not address the question whether there is any single factor that might have been decisive in favor of Lotus. I don't need to do that because under the weighing and comparison of the effect of all of the [4-53] factors—and I accept the point also that Borland has argued that this may not be an exclusive rule. When I accept the obligation to weigh and evaluate all the factors, then I come to the finding that I have stated at the outset, that by a preponderance of the evidence, that Borland's use of copyrightable elements of Lotus 1-2-3 was not a fair use. Now let me proceed with some of the supplemental findings and the order of the factors as stated in the statute and in the precedents.

The purpose or character of the use is the factor I address first, and I find by a preponderance of the evidence, again, that the purpose and character of the use by Borland in this circumstance was essentially and primarily commercial and competitive. This is not a case of use for scholarship or research or for internal or in-house use only. It is not a use only for the purpose of understanding the ideas in order to make use of the ideas in another work. It was primarily aimed at commercial and competitive objectives of entering the market with a product that would compete very successfully with Lotus 1-2-3 in its initial and varying versions as time went on.

Quite important to that objective was the development of macro compatibility as one of the factors. In order to reach in its marketing, the marketing of Borland, not only previously uncommitted potential customers [4-54] but also the existing group, large numbers of owners of versions of Lotus 1-2-3 who had developed their own macros and files and data and had thus put an investment into what they had, that would be sacrificed in a sense if they bought a new product that could not make use of the existing in-house products of the customer built upon 1-2-3 in the development of both macros and

files in which the macros were used. So the purpose and character of the use as a factor in the factor analysis weighs very heavily against Borland.

Now I turn to the second factor, the nature of the work. In this respect I take account of the rulings with respect to nature of the work that I have already made as a matter of law with respect to the issues that I have decided on the motions for summary judgment, and under those determinations the Lotus 1-2-3 work as to which copyrightability and copyright infringement is being claimed in this case had expressive and not merely functional or utilitarian characteristics that are copyrightable, and those were substantial.

Now, at this point I take note that for my previous purposes of making the summary judgment ruling I did determine as a matter of law that the expressive elements constituted more than—the expressive elements that were used by Borland were more than a trivial portion. [4-55] At this point I have yet to make rulings in this trial with respect to some further issues as to how extensive the use by Borland of expressive elements came to be. I need not make that determination at this point precisely in order to decide the present issues before me with respect to fair use, but I do take note of the fact that the use that has been made goes beyond just, quote, more than a trivial portion, unquote, and take that into account as one of the additional factors that I am considering with respect to the fair use issue.

Now I turn to the third element, the amount and substantiality of taking, and the point that I have just made is of course relevant here as well. The determinations that I have made as a matter of law in the previous rulings, when I take them into account along with all of the other factors in this analysis, are sufficient to support the ultimate finding that I have made, and for that reason I do not address that issue further at this time. I will be making further findings after we've completed all the evidence before me in the remainder of the trial on that issue for other purposes rather than simply this purpose of deciding the fair use question.

As to the fourth factor, I first take note of a legal ruling. I do not read the cases, and in particular *Sega Enterprises vs. Accolade* by the Ninth Circuit in 1993 [4-56] and *Lewis Galoob Toys vs. Nintendo* by the Ninth Circuit in 1992, as establishing a legal standard of supplanting the copyrighted product in the market. Those opinions contain clear indications that if there was supplanting found, then of course that would weigh very, very heavily in favor of a determination that the use was not fair. They do not say by any means that supplanting is essential even to a determination that this fourth factor weighs against fair use. And I would be deeply concerned if they did say that as to whether I should follow it in light of what appears to me to be a deviation from an appropriate reading of the congressional directive. We, after all, as judges must follow that congressional directive in 17 United States Code, Section 107, with respect to the way this fourth factor is phrased.

Also, there is as I read the statute and the precedents built into this fourth factor a causation requirement, and that means to me that as I apply that standard to the facts of this case, that I must find by a preponderance of the evidence that this use, the conduct of Lotus in relation to this use, does have and has had a harmful effect on the Lotus market share and the appropriate—

MR. REBACK: I think you misspoke here. The conduct of Borland I believe you meant to say.

[4-57] THE COURT: I beg your pardon?

MR. REBACK: I think you just misspoke. I think you meant to say the conduct of Borland.

THE COURT: Did I say the conduct of Lotus?

MR. REBACK: Yes, you did, your Honor.

THE COURT: Well, if I did, thank you for correcting me. The conduct of Borland is what I'm talking about did have a substantial impact on the market share that Lotus would have had.

And I take note also of the point that Mr. Gutman has made which I think is correct, that it's not even market share that is



the final decisive point as to whether there's been some harm, because if the market share has been maintained only in a competitive situation that causes price reduction, that still has had a harmful effect.

Now, when I put all of these factors together, then, as I have stated at the outset and I repeat finally, I find by a preponderance of the evidence that Borland's use of copy-rightable elements of Lotus 1-2-3 was not a fair use.

Now, that completes my statement of findings and conclusions on this issue. I invite the parties right now, both of you, to tell me if there's anything that I have stated that you wish to call to my attention as a—as you think an error or misunderstanding. I'm not asking for reargument, but, for example, you've just kindly called my [4-58] attention to a misstatement I made with respect to the name of the parties. If I've done anything else of that kind in the course of these statements, of course I invite you to call it to my attention now. Also, if either of you thinks I have not addressed some issue that is essential, I invite you to bring it to my attention now.

MR. GUTMAN: No exceptions, your Honor, and I can't think of any additional findings we would need.

MR. REBACK: Your Honor, I did listen carefully and I have nothing to state at this time as well.

Mr. Gelhaar has pointed out to me that under the judgment rule, I have ten days after the entry to file an amendment. I just wanted to see the transcript if I may do so, but nothing comes to my mind immediately, sir.

THE COURT: Certainly.

All right. Now, let me confer with you about what we do next and the answer to that may also determine whether I take a 20-minute recess at this point or later.

What's next on our order of proceedings?

MR. GUTMAN: Again, your Honor, my assumption was that once we disposed of the issue we've just dealt with, we would be proceeding with the Phase II trial pursuant to the stipulation the parties signed; that is, the Key Reader

supplemental complaint trial. I believe the only—strike "believe."

\* \* \*

[4-69] MR. GUTMAN: Excuse me. He will explain that in the demonstration—

MR. REBACK: I beg your pardon.

MR. GUTMAN: —and please wait.

### DIRECT EXAMINATION

BY MR. GUTMAN:

A. Okay. I'm all set.

Q. Thank you. Mr. Roshfeld, I realize you've already been examined, but could you state your full name for the record?

A. Larry Mark Roshfeld.

Q. And where are you employed, sir?

A. I work at Lotus Development Corporation.

Q. And in what capacity?

A. My title is Senior Product Manager for spreadsheets.

Q. And how long have you been at Lotus?

A. It will be nine years in July.

Q. Now, did you prepare a demonstration file for use in your demonstration today?

A. Yes, I did.

Q. And did you also prepare extra copies of it?

A. Yes, I did.

Q. Could I show you—

MR. GUTMAN: May I approach the witness, your Honor?

[4-70] THE COURT: You may.

A. Yes.

Q. Are these in fact three copies of the demo file that you prepared?

A. That's correct.

Q. And they're identical to the one that's now in the machine?

A. That's correct.

MR. GUTMAN: All right. Your Honor, I would like to mark—so the Court may have this available for the Court's use in preparing a decision, I'd like to mark as the next exhibit in order this—

THE COURT: What is the next exhibit in order?

MR. GUTMAN: I am hoping that as I approach someone more knowledgeable than I, I will provide that answer.

MR. REBACK: Excuse me, your Honor. Just give us one second, please.

THE COURT: Yes.

MR. REBACK: It's the first time we've seen this.

THE COURT: All right.

(Pause.)

MR. GUTMAN: I believe it's Exhibit 49, your Honor.

[4-71] MR. REBACK: I'm sorry. Forty-nine?

MR. GUTMAN: I believe that would be the next number. According to the indices of exhibits that would be the next number.

THE COURT: All right. It may be so marked.

BY MR. GUTMAN:

Q. Now, Mr. Roshfeld, could you tell the Court, please, which products you're going to be demonstrating?

A. Yeah, I'll be demonstrating 1-2-3 release 2.01; Quattro Pro for DOS release 3, Quattro Pro for DOS release 4.01, or at least that's what I was told to use—to refer to that product, which is Quattro Pro for DOS release 4 manufactured and sold subsequent to August of 1992; and Quattro Pro for Windows. And I'll be running all of these products from Microsoft Windows version 3.1.

MR. REBACK: Your Honor, to avoid interrupting the presentation I do need to state an objection for the record here to preserve the objection—

THE COURT: All right.

MR. REBACK: —if I may. The witness has testified that the only Lotus product he's going to demonstrate is Lotus version 2.01. Your Honor will recall we previously argued, and I don't intend to bore the Court with that argument again, that we're not charged with infringement of that product. There is an earlier [4-72] stipulation in this case, but that stipulation was entered into prior to the Key Reader phase and does not affect the Key Reader phase of the case.

I know from the record that there is some difference between 2.0 and 2.01 that affects the macro compatibility. I've not had the opportunity to take discovery on that because the Court precluded discovery until after release versions of Lotus 1-2-3.

So I just want to state for the record that's not what we're charged with infringement of, and I don't know the difference between that and 2.0 insofar as macro capability is concerned.

MR. GUTMAN: First of all—

MR. REBACK: Oh, excuse me. One other point. We did ask him to load 2.0 and to demonstrate that, but apparently they were unable to do so.

MR. GUTMAN: Nobody had a copy of 2.0 that could be loaded, your Honor. I believe that the problem and we have stipulated and there was nothing in that stipulation that restricted it to Phase I of the trial as opposed to the entire case that there were no material differences between 2.0 and 2.01, number one.

Number two: Both of us in the previous demonstrations we did, which were videotaped in connection with the summary judgment motion, used 2.01. So if there's [4-73] something wrong with using 2.01 which is readily available and easily loaded and stored on a hard drive and easy to use for the demonstration, it's a little late in the day for Mr. Reback to be raising that point and it's a bit unseemingly in light of his stipulation.

Three: He was never foreclosed from any discovery with respect to 2.01. He had full discovery on that subject; and to the extent that there were issues as to later released versions of 1-2-3, they were releases after 2.01.



MR. REBACK: Let me just respond briefly. We have objected at each point when they've attempted to demonstrate version 2.01 as opposed to version 2.0, so I think I'm protected on that. There's no inconsistency here. We've always raised that.

There is a material difference between the issue as it pertained to the rest of the case and the issue as it pertains to the Key Reader.

The stipulation was entered on October 28th, 1991 before the Key Reader was in the case and says there are no material differences in the user interface of the two versions that would have any effect on the issues in this case. That was before the Key Reader.

We're now trying the issue of macro compatibility. I do believe there is some difference in [4-74] macro compatibility between version 2.0 and 2.01. I just don't know what it is.

THE COURT: Well, I will overrule the objection. It seems to me it is quite analogous to an objection that is made when a photograph is being introduced and there's some difference between the photograph introduced and the circumstances that are relevant to the case; and the common practice is to receive it in evidence with permission for the opposing side to show me what any differences could be that would make any difference.

Now, in light of the explanation, which I take it you're not challenging that a version of 2.0 that could be loaded for this demonstration was not available, if you've got one, then you may put it on at some point and we'll see if it makes any difference.

But I am overruling the objection without prejudice. This is an objection to receiving it into evidence. If you have anything to show me in cross-examination or by way of counter-demonstration to support your hypothesis that there's something here that makes a difference, you'll be free to do it.

MR. REBACK: All right. I understand that, sir. And we will show you deposition testimony at the relevant time. But I have to say without having had discovery on the issue, it's

going to limit my ability to [4-75] show whatever I need to show.

THE COURT: Well, now there is a flat contradiction between what you're saying to me with respect to whether you've had discovery on this issue. Mr. Gutman is telling me that you did on 2.0 and 2.1, and it's only later versions to which there was a preclusion on discovery.

Now what's the basis for telling me you were precluded from discovery with respect to 2.1?

MR. REBACK: Your Honor, I thought that the order your Honor entered a couple of years ago precluded me from taking discovery of any version of Lotus 1-2-3 subsequent to what I was charged with infringing in the complaint.

THE COURT: Mr. Reback, I would never rule on the basis of my memory of my order two years ago. It was an order that's on the record somewhere. So if you contend that there was something about my order that precluded you from discovery with respect to 2.1, show it to me.

MR. REBACK: Okay.

THE COURT: And I'll permit you at the time to do that during a recess and bring it to my attention.

MR. REBACK: Thank you, sir.

THE COURT: All right. You may proceed.

MR. GUTMAN: Thank you, your Honor.

BY MR. GUTMAN:

[4-76] Q. Now, in setting up these programs that you're going to demonstrate just a few moments ago, you changed the Quattro products from WYSIWYG mode to character mode. Is that correct?

A. That's correct.

Q. Could you explain to the Court why you did that?

A. The version of 1-2-3 that I'm showing 2.01 only displays in character mode. The versions of Quattro Pro for DOS, Quattro Pro 3 and 4.01 default to displaying in their WYSIWYG mode which is graphical font mode. The difference is that in 1-2-3, as you can see on the screen, it shows 20

lines; and Quattro Pro in their WYSIWYG mode it shows like 22 lines, I believe.

The problem was—for me was that when I set up this demo file so I could show one screen at a time, the breaks between the screens got changed because the screen went from 20 lines to 22 lines. It doesn't really affect anything that I'm showing you.

If you'd like I'd be glad to go back into the WYSIWYG mode. The only difference is it means that something that I would not have wanted to show in a demo until later on will now be visible because of the problem of these additional lines affecting the break on the screen.

Q. Thank you, Mr. Roshfeld. Now, the program showing now is Lotus 1-2-3?

[4-77] A. That's correct, Lotus 2.01.

Q. And this is your demonstration file?

A. That's correct.

Q. Okay. Now am I right in understanding that the items in column B in cells one, three and five are macros that you prepared in advance?

A. That's correct.

Q. Just so we're clear on how a macro is prepared. Could you please erase the first two and recreate them; and since our only record of your demonstration today is going to be the transcript the Court Reporter prepares I would ask that, to the extent you can, you speak out loud the various keystrokes you're undertaking so we'll have a record.

A. I will try to do that.

So the first thing I'm going to do is erase the cells B1, B2 and B3 to erase the macros that are put in them. To do that I'll hit the slash key, bring up the 1-2-3 menu, choose the range command, choose the erase command, and then highlight those three cells, excuse me, highlight those three cells and press enter, and that just erases the content of those cells.

THE COURT: Wait a minute. You only highlighted two of them, didn't you?

THE WITNESS: I highlighted the blank cell in between, your Honor.

[4-78] THE COURT: Oh, I see. All right. Okay.

BY MR. GUTMAN:

Q. Okay. Now, what's the purpose of the first macro, the macro labeled A?

A. The first macro works through the menus in 1-2-3 and chooses first the slash key, brings up the range—excuse me, brings up the menu itself. The letter R brings up the range menu, the letter F chooses the format, the submenu. C chooses currency, and then it accepts the default for two decimal places, and then it formats the current cell, so it's just that a macro, that it automates the process of formatting a cell to be two decimal places with the dollar sign in front of it.

Q. Now could you type in that macro showing the Court how it is created?

A. The first thing I need to do is put in a label prefix. Because if I simply type the slash key, it doesn't go in as an entry to the cell. It actually brings up the menu.

And so first I type in a label prefix, and then from then on what I'm typing is essentially the label. So I type in the slash key which will bring up the menu in the macro it's on, the letter R to bring up the range menu, the F for format, the C for currency. At this point if I were doing it manually, I would hit the return key to accept the default of two decimal places.

[4-79] In macro, the way you represent the return key is by using the tilde symbol. And then at this point if I'm working through the menus manually, I would be prompted for the range, and the default would be the current cell.

In this case I'll accept that, but then another tilde in which again represents another enter, and that would complete that command sequence. So since there's no subsequent commands on that line or any following lines, the macro would cease execution at that point after it's formatted the cell.



Q. Now, could you recreate macro B explaining what you're doing?

A. If I go down to cell B3, which is where I had previously had macro B, again, I put in the label prefix so that I can enter in the rest of the macro, put the slash key in that will bring up the menu, the letter W for worksheet, the letter G which will choose from the worksheet submenu, the choice global, the letter F for format.

So what I'm doing in this macro is changing rather than the format of a single cell the global format for the entire current worksheet. I'll choose C again for currency, and then accept the default for two decimal places again by putting a tilde and representing enter.

The difference between this macro—the reason I only need one tilde versus the other where I needed two was [4-80] that the other command only worked on a portion of the spreadsheet so I needed to specify which portion. This is a global command, so I don't need to specify a portion because by default it operates on the entire worksheet; and then to finish the macro I think just press enter and that enters into the cell as a label.

Q. Now I notice that you didn't name either the A macro or the B macro. Why is that?

A. Well, I had—the reason I didn't name either the A macro or the B macro is that they had been named previously.

If I wanted to name those macros so that 1-2-3 knew that it were macros, that's done by assigning them a particular type of arrangement, and I've already done that. But to show you how I would do it again, I would hit slash key to bring up the menu, choose the range option from that menu, and then choose from the range menu, name, and then create, and what I want to do is create a macro name.

Macro names by default in 1-2-3 are starting with the back slash character followed by a single letter. So in this case if I wanted to name the A macro, I would call it back slash A, press enter, and then specify the range which contains that macro, in this case cell B one. So I'd press enter again, and

that's what I had done previously in this demo file to name these macros.

Q. Now, again, describing what you're doing for the [4-81] record, could you please demonstrate to the Court how macros A, B and—well, let's make it A and B for now work.

A. The first thing I'm going to do is move my cell pointer over to cell C9. As you can see on the screen, there's a series of columns of numbers. So there's five columns, each column having six numbers in it. And the first thing I'm going to do is run that back slash A macro which will point out the current cells which contains the value 456 as currency to that macro.

To execute a macro, I first press down the Alt key, A-L-T key, on the keyboard, and press the letter that I had assigned to that macro; so in this case it's the macro back slash A, so I press the letter A.

So Alt A, and it went very quickly, but this is a fast computer. But what the macro did is passed those same key strokes to 1-2-3 that I would have done manually so the first keystroke brought up the menu.

In this case the slash brought up the menu, R chose range, F chose format, C chose currency. At that point I was prompted for the number of decimal places, and then I pressed enter. In fact, why don't I just show you what the menus looked like.

Slash key brings up the menu. It would then choose range by pressing or—excuse me, bypassing the letter R to the menus, F chooses format, C would choose the [4-82] currency option. At this point it defaults to two decimal places, so I just accepted that by pressing enter. And then it defaults to the current cell for the destination for that formatting, and again I accepted that by pressing enter. So I just manually repeated the same process that the macro had done.

Q. Thank you. Now could you show us macro B in operation?

A. As I had mentioned earlier, macro B will globally format the entire worksheet as currency, two decimal places, so

the rest of the numbers on the screen will display with the dollar sign and two decimal places.

To run the back slash B macro, again, I hold down the Alt key and press the letter B.

Q. Now I see you've got a column of asterisks over in the G column. Why is that?

A. The numbers in the G column were larger. They were in the tens of thousands, I believe; and so there wasn't enough room in the default column width to display the number with two decimal places and preceding dollar sign.

So in 1-2-3 we display asterisks there to signify that there's contents there, but there's not enough room to display it accurately.

Q. Now, if my hunch is right, macro C would solve the problem?

[4-83] A. Yeah. Macro C will change the column width of the current column to a width of 15. The default in 1-2-3 is nine characters wide, and through experimentation I determined that 15 was wide enough to adequately display this.

So what this macro will do is first bring up the menu. To depress the macro, the W will choose work sheet, the C will choose column, the S will choose set width. It then pauses and prompts the user for the width to set. We will enter in the numbers one and five for 15, and then the tilde accepts that.

So to run this macro I press Alt, and the letter C, and the column is widened to a width of 15. You can see in the top left corner of the screen next to the cell address where it says G9 colon, it displays W15 within square braces and that signifies the width of the column.

Q. Okay. Now, are you familiar with something called interactive macros?

A. Yes, I am.

Q. Okay. Could you tell the Court, please, what an interactive macro is?

A. In the macros that I just demonstrated they were what we would call hard coded. There was no variation within the

structure of the macro itself. It did a particular task from beginning to end.

[4-84] Interactive macros are intended to allow the users to provide options in the midst of the execution of macro. So, for example, if I were writing a macro for either my own use or for someone else's use, I wanted them to be able to specify in the midst of the macro the number of decimal places they wanted to display, I could design a macro that paused at that point, allowed the user to enter whatever number of decimal places they choose, press the enter key, and then the macro key would continue execution.

Q. Do you have some prepared?

A. Yes. If I page down now, you'll see that the screen now shows rows 21 through 40, the same columns, so I just simply press the page down key to move down on the screen to a subsequent series of rows, and here I have four different macros.

MR. REBACK: Excuse me, sir. Are they also on this disk that we've gotten a copy of?

THE WITNESS: Yes. Everything that I'm showing you comes from a single file called demo.WK1.

MR. REBACK: Which is on this disk?

THE WITNESS: Yes. And the file demo.WK1 is on that disk.

MR. REBACK: Thank you.

BY MR. GUTMAN:

Q. Okay. Now, could you tell us, please, what macro D [4-85] does?

A. I'm going to move my cursor back over to cell C29. Macro D is similar to the previous macro I had shown that did formatting of currency to two decimal places.

The difference in this macro is that it prompts the user in two different places during the execution of the macro for feedback. So it does flash to bring up the menu, R for range, F for format, C for currency.



At that point we instruct the macro to pause by using a particular command in the 1-2-3 macro language which is those squiggly braces with a question mark between them followed by a tilde which accepts the user's input.

So at that point it pauses and allows the user to determine how many decimal places they wish to format, but it is hard coded for currency, so it will always do currency, but it allows you to specify the number of decimal places; and after you specify the decimal places they can then specify the range to effect.

Q. Thank you. Could you show us how macro D works, please?

A. I'll run that macro by pressing Alt D. The macro works its way through the menu, pauses at the point where I'm prompted for the number of decimal places.

In this case I'll choose zero decimal places, press enter to accept that. The macro then can cease [4-86] operating, gets to the next step, which is a pause for the range to format, and I'll use my cursor keys to highlight a range of three cells by three cells; and now when I press enter, you can see that the change on the screen—those nine values are now displayed as currency with zero decimal places.

Q. Now could you describe macro E for us, please?

A. Macro E is an extension of what we just saw in macro D. It's interactive both for the type of format as well as for the number of decimal places and the location.

So in macro E, the slash key brings up the menu, R chooses range, F chooses format. At that point the user is left in the format submenu. They can then point to whatever particular format type they choose. When they press enter, they're then prompted to the number of decimal places, and when they press enter again, they're prompted for the location.

Q. Could you show us how it works, please?

A. To run that macro, choose Alt E. In this case rather than just defaulting to currency I can choose whichever one I'd like.

In this case I'll choose scientific format, instead of exponential format. I'll put in just for variety one decimal place, and I'll highlight a two-by-two range of cells. And now when I press enter, those four cells are [4-87] formatted as exponential or scientific notation.

Q. Thank you. Now could you describe, please, macro F.

A. Macro F is also an interactive macro. It brings up the menu, chooses worksheet, and then chooses insert, and at that point the user can specify what they want to insert.

If I show you that manually on the menu, it's the equivalent of hitting the slash key to get a menu, worksheet, and then insert, and then at that point the macro pauses to allow me to choose either column or row. And I'll just escape out of the menu using the escape key so I don't actually generate that operation.

Q. Now could you show us how macro F works?

A. Pull down the Alt key, press the letter F. It asks me for column or row. I will specify row. And what it will do is insert a row, prompt me for the location where I want that row inserted, and I'll say at the current location, and by default it inserts a row above the current cursor position.

Q. Now could you describe macro G, please.

A. Macro G is similar to macro F in that it brings me to the worksheet insert menu. But at this point rather than allowing me to choose between column and row the R in that macro specifies row, and then all I have left to choose at that point is the location where I want the row inserted.

Q. Okay. Could you show us how that operates, please.

[4-88] A. Hold down Alt and the letter G. And now it's gone beyond that column or row choice, and it's gone straight to the point where it prompts me to enter row insert range. And if I press enter at this point, it inserts another row so the effect visually on the screen was to move that range of data down away from the macros.

Q. Okay. Thank you. Mr. Roshfeld, I'd now like you to move the demonstration to Quattro Pro release 3.0.

A. What I'm going to do since I'm running under Windows I can switch between different products running at the same time. To move between the products I'll take the end of the hot key, in Windows which is the Alt tab key, which allows me to cycle through all the different applications that are loaded in memory until I get to the one I'm interested in at this point, which is Quattro Pro 3.

So what you see on the screen right now is Quattro Pro 3. I have retrieved that same demo.WK1 file from the same floppy that I used to retrieve the file 1-2-3.01. And as you can see I'm in the character mode in Quattro Pro in order to display the same number of rows on the screen as I had in 1-2-3.

Q. Okay. And am I right in understanding that this file, this demo file, was prepared using Lotus 1-2-3?

A. That's correct.

Q. Now, could you show us, please, how macro A works in [4-89] Quattro Pro 3.0?

A. Okay. If I wanted to run this macro I would do the same thing as I did in 1-2-3. I would hold down the Alt key and hit the letter A, which is the back slash A macro, and something very different happened than what had happened in 1-2-3.

Q. Right. Okay. Can you escape from that?

A. (Complies.)

No, I have to reopen the file. It appears that what had happened is that in the course of processing those keystrokes for some reason removed that file from memory, so again I'll go out to the A drive which is my floppy drive and retrieve that demo.WK1 column.

Q. Now you were using the Quattro native menu in Quattro Pro 3.0 at that point, correct?

A. Yes. The native menus in Quattro Pro 3.0 are currently on the screen.

Q. Okay. Now could you turn on the macro Key Reader, please, and try it again.

A. To turn on the macro Key Reader in Quattro Pro 3, I hit the slash key to access the menu, I move my cursor over to the tools menu, press enter.

Now I want to select the macro submenu, so I'll press enter, since macro is already highlighted; and then if I move my cursor down to the bottom of that list, you'll see [4-90] Key Reader. I press enter, and it now says the default was no, however, it had been set previously, and I'll change that to yes. So I've just turned on the macro Key Reader feature in Quattro Pro 3.

Q. And now could you try macro A, again, please?

A. Again, I'll try macro A by holding down the Alt key and hitting the letter A. And what I see on the scene is that that single cell has now formatted currency two decimal places.

Q. And now could you operate macro B?

A. Macro B, just to remind you, is the macro that had globally formatted the entire sheet as currency. So I'll hit Alt B to run that macro, and you'll see the same result as we had seen in 1-2-3. All the numbers in the table are formatted to currency, two decimal places. The last column does not display, and it shows as asterisks rather than as the previous values that had been there.

Q. Okay. Now, could you execute macro C, please.

A. I'll move my cursor over to column G, which is the column I want to make wider to the width of 15. And I'll hit the macro Alt C, and now the column is widened.

You can see up again in the top left-hand corner that, you know, Quattro Pro 3 uses a similar notation to indicate that it's now with the 15.

Q. And now could you turn to the next page of your demo [4-91] file and look at the interactive macro.

A. So I'll press page down to move to the next set of macros, and I'll move my cursor over again to cell C29, which would be in the top left corner of the table.

Q. Okay. Now, could you execute macro D for us, please.

A. Macro D just to remind you is the macro that chooses range format currency, and then prompts the user for the number of decimal places and the location.

So I'll hit Alt D. It prompts me for the number of decimal places as I did 1-2-3. I'll choose zero decimal places, and I'm



now prompted to the location I want to change. Quattro Pro 3 appears to use the term block, whereas in 1-2-3 we use the term range, but I'll highlight a certain number of cells. Again, that's three by three matrix. Now I'll press enter. And now there's nine cells are formatted as currency, no decimal place also.

Q. Thank you. Can you execute macro E, please.

A. Macro E as you recall is the macro that allows me to choose the type of formatting as well as the number of decimal places and the location.

To execute macro E, it's Alt E. It now pops up a menu box on the screen that provides what appears to me to be the same choices as I had in 1-2-3, so I can use my cursor key to move to the next choice. Interestingly, whereas I would have expected the up and down arrow keys to [4-92] work here, the right and left arrow keys also work as well.

So if I wanted to move from fixed, which is the first choice on the list, to scientific, I can press this right arrow key, which is what I'm doing now, and it moves what appears to be on the screen down one to scientific. Press enter to choose scientific. Again, I'll choose one decimal place, and I'll highlight the cells I want to change; and, again, I'll highlight those same four cells and now those four cells display a scientific notation.

Q. And now could you execute macro F.

A. As you recall, F is the one that did worksheet insert and paused to allow me to choose column and row. If I wanted macro F by hitting Alt F, I get a beep. I don't know if that was audible to anyone else in the courtroom, but the computer beeped and I get an error box that says menu unavailable, and I can just hit escape to recover from that error. The macro is done executing, but it didn't perform any operation.

Q. Okay. So that one didn't work?

A. That did not do the same thing as it had in 1-2-3.

Q. Could you try macro G, please.

A. To run macro G which was the macro that choose worksheet insert row and simply prompted me for the location of

the row, I choose Alt, and the letter G. It asks me where I choose to insert a row, and I'll just again default [4-93] as I did in 1-2-3 to the current location, and what it will do is right now there's a blank row between row 27 and row 29, where 28 is blank. If I press enter, it pushes the information down and now both row 28 and 29 are blank.

Q. Okay. Now what I'd like you to do next is switch the menus in Quattro Pro 3.0 to the 1-2-3 compatible mode. Can you do that, please?

A. Yes. To change the menus in Quattro Pro 3, I choose the slash key to access the menu. I'll move my cursor over to the top line menu command called options. I'll go down to the command called startup on that submenu, and select that by pressing enter. I'll move down to the option called menu tree and select enter. I then get a pop-up list that has three options in it: 1-2-3, Q1 and Quattro.

And you had asked me to selected 1-2-3?

Q. Yes.

A. So I'll press enter when the cursor is highlighting 1-2-3. And now what I see on the screen is that the top line menu has changed to be very similar to the 1-2-3 menu system.

Q. Okay. If I could ask you to back up—

MR. REBACK: Excuse me. Object to the witness's characterization as very similar. That screen speaks for itself, your Honor.

THE COURT: All right. I've seen it. The [4-94] objection is sustained. I'll strike that characterization.

Q. Okay. Could you back up one page to the A macro, please.

A. Page up to go back up to the top line.

Q. Now could you show us how these macros execute using the Quattro Pro 1-2-3 compatible user interface.

A. Okay. If I hit Alt A, the current cell is already formatted as currency. It may not be obvious what happens, but I can

hit Alt A and the macro runs. There's no error. There's nothing to indicate that it didn't work correctly.

Q. Okay. So without changing these back it's not visible. Can you quickly reset it or—

A. Yeah. I can just—I'm using the 1-2-3 menus in Quattro Pro to just reset this range.

Okay. Because I turned on global format, it's not a range setting, so I can go back in and choose slash worksheet—

MR. REBACK: Excuse me, your Honor. I object to this line of testimony. This interface is now out of the product. We're only here to try the Key Reader issue. He need not run through the Lotus compatible menu structure in order to try the Key Reader issue. If he wants to run the Key Reader, let's just let him do it.

THE COURT: Objection overruled.

A. Would you like me to change the global format back? [4-95] Q. Yeah, if you can do it quickly.

A. I'm just going to do the same keystrokes I would have done in 1-2-3, which would be global format general which just puts that table of numbers back to the general display, which is no commas, no decimal places, no dollar signs.

Q. Now if you could show us in execution macro A, macro B and then macro C, please.

A. We'll run the macro, Alt A. It now formats that single cell, so C9 has turned to two decimal places. If I run the macro Alt B, it will now change the global format to currency, so the rest of the numbers on the spreadsheet will now display currency. So Alt B, and they display as well. Since I hadn't adjusted the column width, column G back to the prior previous setting, you know—

Q. But I take it you executed macro C it would change the column width to 15?

A. Absolutely.

Q. Could you flip to the next page, please, and just quickly show us the interactive macros?

A. Okay. Put my cursor now on C30, since I inserted a row to what was there previously. If I choose the Alt D macro, it prompts me for the number of decimal places, and I'll choose—in this case it was formatting the currency, so I'll choose one decimal place just to make something look a little different, and I'll highlight those nine cells [4-96] again.

Now you see I've formatted them as currency one decimal place.

Q. Could you try macro E, please.

A. If I run the Alt E macro, it gives me that menu I had described earlier of the different format options, and I'll choose scientific, again; and I'll choose zero decimal places this time and highlight four cells, and that is formatted as scientific.

Q. Could you try macro F, please.

A. If I run macro F holding down Alt F, it now pops up a little box that gives me a choice between column and row, and I can choose row and then specify the range, and I'll say the current range, and it inserts another blank row.

Q. And G.

A. If I hold down Alt G to run the G macro, this chooses worksheet insert row, and then pauses to allow me to specify the range. If I press enter, I get that range again.

Q. Now do I remember correctly that when you were using the Quattro native menus with the Key Reader, macro F was the one that did not operate properly?

A. That's correct. When I operated—when I executed macro F with the Key Reader turned on—excuse me, with the Key Reader turned off and the Quattro native menus, it did not execute correctly.

[4-97] Q. Okay. Now could you switch to Quattro Pro 4.01, please, or what we've been calling 4.01.

A. Again I'll use this Alt tab key combination in Windows is the appropriate product, and then select it.

We're now in Quattro Pro 4.01. I just had turned off the WYSIWYG display in order to set the number of rows and to



set the number of columns, and I'm in the native menus of this product.

Q. Okay. Could you turn the Key Reader on, please.

A. Yes. To do that, slash, to access the menu, choose tools, choose macro, move down to the Key Reader option, press enter, and then I'll select yes to turn that on.

Q. Okay. Now with the Key Reader turned on, could you try macro A.

A. Macro A, which is the format that the current cells turn to, two decimal places, I'll hit Alt A—press Alt A, and it formatted the current cell as currency two decimal places.

Q. Could you try macro B, please.

A. Macro B does the global format to currency, so all the values in the spreadsheet that aren't otherwise formatted will be formatted as currency two decimal places; so I'll hit Alt B, and you'll see the same result that we had seen earlier in 1-2-3.

Q. And could you use macro C to fix column G.

[4-98] A. Since column G is displaying asterisks, I will run Alt C and that makes the column a little bit different in the values in the spreadsheet.

Q. Now let's try the interactive macros on the next page.

A. So I'll page down and move to cell C29 again. The first macro, Alt D—excuse me or back slash D does range format currency. It prompts for the number of decimal places and the location.

To execute that I'll do Alt D. I'll choose zero decimal places, and I'll highlight those same nine cells I highlighted in previous products.

Q. I'm sorry. And now could you do E, please.

A. Macro E was the one that allowed me to choose the format type as well as the number of decimal places as well as the number of—excuse me, the number of cells or the location of cells. So I'll run that by choosing Alt E. As I did previously, point to scientific, choose scientific, choose one decimal place, and then highlight in this case only four cells. And those four cells are formatted as scientific notation, two decimal places—or excuse me, one decimal place.

Q. Now could you try macro F, please.

A. Macro F is the one that paused and prompted into either column or row, and I again do column and row. So to run that I choose Alt F, and I get an error message which [4-99] says menu unavailable.

Q. Could you please try the next macro of the one in which you have designated whether it's column or row.

A. I'll press escape to clear that error message, and I'm back to a ready prompt. If I choose Alt G to insert a row, it pauses and prompts me for where I'd like to insert the row. And I'll press enter, and it inserts a row at that location.

Q. Thank you. Now could we try the same thing in Quattro Pro for Windows, please.

A. Again I'll use Windows' hot key to move to Quattro Pro for Windows.

I had previously retrieved Quattro Pro for Windows—excuse me, actually Quattro Pro for Windows and had retrieved the demo DWK1 file from the floppy disk.

Q. Okay. Now could you just—Mr. Roshfeld, if you could just run through macros A through G, please, in Quattro Pro for Windows.

A. In Quattro Pro for Windows to run a back slash A macro I press the control key and the letter A. So I'll hold down control and the letter A, and it beeped and the worksheet seems to have disappeared.

Q. All right. Why don't we turn on the Key Reader.

A. (Complies.)

Let me open that file again from disk. And to [4-100] turn on the Key Reader I press the Alt key. To access the menu I'll move over to the option called property, select enter, move down to the option that says application, and select enter.

At this point I'm going to use the mouse because I'm just personally not comfortable with the keyboard conventions in Quattro Pro for Windows. I'm not familiar with them.

I'll choose the macro setting in this dialogue box, and then part of the dialogue box changes to give me the macro specific options; and I will click on the macro option called Key

Reader, and it puts a little check in the box next to Key Reader, and then I'll click on okay.

Q. Now with the Key Reader turned on, would you please execute macros A through G in Quattro Pro for Windows.

A. Just so it doesn't appear that I'm doing anything deceptive, I'm just going to make the size of this window like the spreadsheet number 45 and at the same time I'm going to pan it to partial black.

Now I'll execute macro back slash A by hitting control A, and now that cell is formatted as currency two decimal places.

Q. Okay. Now can you do—

A. Do you want me to do the C prompt?

Q. Yeah. Why don't you just walk through them, please.

[4-101] A. So the global format, macro back slash B is control B, and now the first four columns of values displayed as currency two decimal places, the last column displays as astericks.

If I put my cursor in that last column and choose the macro back slash C, by pressing control C, it now widens the column to a width of 15.

Q. And the interactive macros, please.

A. Page down to the interactive macros. And now the first thing I'll do is run the Alt D macro that allows me to interact and decide the number of decimal places and location. I'll choose control D. I'll choose zero decimal places, and press enter; and then I'll highlight those nine cells, three columns and three rows, and press enter. And now those nine cells are formatted as currency zero decimal places.

So to use macro E which allows me to choose the type of formatting as well as the number of decimal places and the location, I'll press control E, and I don't see anything—any sort of menu on the screen at all. On the bottom right-hand corner of the screen, though, I see two indications; one says macro, which I believe indicates that I'm still in the midst of the macro, and next to it is an indicator that says menu. So perhaps I'm still on the menu.

So what I'll do is blindly execute the same keys [4-102] that I would have done previously. So I'll choose S for scientific, and now it asks me for the number of decimal places. I'll choose one, and press enter, and then highlight the four cells to be modified and press enter. And now those four cells appear to be formatted the same way as they had been previously, scientific notation, one decimal point.

Q. So am I right in understanding that that interactive macro accepted the same keystrokes at that point as 1-2-3 would have?

A. Yes, it did.

Q. And produced the same result?

A. Yes, it did produce the same result.

Q. Now could you try macro F, please.

A. At this point I'll run macro F, which allows me to choose between column and row insertion in 1-2-3. I'll hit control F. I don't see anything on the screen, but it tells me that it's in a macro and it's ready. So I'll choose R for row—actually I may have hit the wrong key. I'm going to hit control break to stop the execution of that macro, because I'm not absolutely sure I may have hit control. I may have hit another key.

So I'll hit control F, and I'll be more careful this time. Now on the bottom of the screen in the far right lower corner I see macro and menu again. And what I would [4-103] do in 1-2-3, if I were doing this I would press R for row, and now I get a prompt that says enter row, insert block. So I'll accept the current location, and it appears to have inserted a row exactly where I wanted it to and operated in the same way as if I had done that sequence in 1-2-3.

Q. And am I right that this is the macro that didn't work in Quattro Pro 3.0 and 4.01 in the native mode. Is that right?

A. That's correct.

Q. But it works in Quattro Pro for Windows?

A. Yes, it appears to work correctly in Quattro Pro for Windows.

Q. Now could you try macro G, please.



A. Macro G just inserts a row, but it allows me to choose where. So I'll choose control G. And it just popped up with that same prompt for enter row, insert block, and I'll press the current location, and now it inserts another blank row in there.

Q. So am I right that each of these interactive macros worked in Quattro Pro for Windows with the Key Reader on?

A. That's correct. Each of the macros worked correctly in Quattro Pro for Windows with the Key Reader on.

Q. Okay. Now each of the macros you've created to this point have been written by means of the first letters of the commands. There's another way to create macros, isn't [4-104] there?

A. That's correct. Another way to create macros is actually use cursor movements to walk through the menus.

Q. Okay. Let's return to Lotus 1-2-3, and if you could show us some macros that were created using cursor movements rather than the initials of commands.

A. Okay. Again, I use the Windows hot key to go to 1-2-3, and I'll press page down to go to that third page or third screen of the macro information.

You see a similar table of data that we had had been working with previously, and you can see that there's two macros, back slash H macro and a back slash I macro. Let me describe the back slash H macro.

The first command in that macro is a slash which brings up the menu; but at that point rather than doing first letter selection, the way some users would work through the menu, it actually moves the highlight through the menu similar to the way I was doing it earlier to illustrate some of my points.

So if I were manually doing this macro, I would put my cursor on the first cell containing data. The slash key brings up the menu, the command that you see in macro back slash H right would move the cursor right one location. The tilde performs the same operation as if I hit enter. There's then a second tilde, which is equivalent to a second [4-105] enter,

which accepts the current menu choice which is format. Then there's two commands right, and followed by right again, so that moves the cursor right two positions to highlight the menu choice currency. And then that's followed by a tilde to be the equivalent of enter, and then at that point the macro includes the number zero, so it would replace the two that's the default setting there with a zero. And then you would press enter once to format that—excuse me, enter to accept the zero, and then enter a second time to accept that range.

And I'm going to—rather than finish the execution of this command sequence manually, I'm going to use the escape key to escape back out of the menu, and now I'll run this Alt H macro.

Q. Okay. Would you do that, please.

A. I'll hold down the Alt key and hit the letter H, and now the format of that single cell changed to display rather than two decimal places in currency it displays as zero decimal place in currency.

Q. Okay. Now, is there something in 1-2-3 that allows you to slow down the operation of the macro, the execution, so you can see it executing step by step?

A. There's a feature in 1-2-3 that we call trace mode. The trace command allows somebody who's creating a macro to walk through the macro as it executes one step at a time [4-106] which is useful for finding any problems or mistakes in writing the macro.

Q. Could you turn on that step mode, please, and then could you execute macro I using the step mode so that we can see how it works.

A. To turn on step mode, I hit Alt and the function key F2. And you'll see on the bottom of the screen the word step appears on the lowest line. That just indicates that I've turned on the step mode.

And now which macro would you like me to execute in the step mode?

Q. Let's do I.

A. The I macro changes the column width of the current column to nine. So what I'll do is I'll run this off the I macro. That puts on macro, but because step mode is on you'll be able to see it execute one instruction at a time.

So if I hit Alt I, the indicator on the bottom of the screen turns into a blinking SST, which indicates that I'm in single step mode now. I press the space bar. It executes the first command and in the macro which indicates slash which brought up the menu.

If I press space bar a second time—what we're looking at is the macro in cell B45, the back slash I macro. The first command, which is slash; the second command is tilde, equivalent of enter; so when I press space bar, which [4-107] is the equivalent of enter, which brings us to the worksheet sub-menu.

Now if I press the space bar again, it will execute the next command in macro, which is a right. So it moves the menu cursor one position to the right. I press space bar again. There's another right, and then a third right. So I've moved cursor three positions to the right to highlight the word column.

At this point, the next step in the macro is a tilde, which is a return key suppressing the space bar, allows the macro to execute that tilde which does return to choose the column menu. It then does another tilde or another return to accept set width. It's then prompting the user for the column width; so when I press a space bar, enter the number nine from the macro, and then finally accept that, so when I press the space bar one more time, see the width of column G, which is where the cell pointer is currently will change to nine.

So the way that macro executed was by moving through the menu tree, but rather than moving through the menu tree, using first letter selection it moved through the menu tree by moving the cursor to highlight the option that the user was interested in.

Q. Now I'd like to move to Quattro Pro 4.01.

A. All right. So I will again use the Windows hot key [4-108] and go to Quattro Pro 4.01, and then I'll page down to get to that same part of that demo worksheet.

Q. Now, is there something in Quattro Pro that is comparable to the step mode in 1-2-3 that allows you to see a macro in operation step by step?

A. There's a macro debugger facility that provides a similar capability to what we call step mode in 1-2-3.

Q. Okay. Actually before you turn that on, could you just trace for us—if you were to do on the Quattro Pro 4.01 menu that you see before you the cursor movements indicated by macro H, could you show us the level of blank, please.

A. I'm going to walk through manually the same keystrokes which are represented in cell W42, which is the back slash H macro key.

So the first thing is a slash key which brings up the menu. And as you recall, this was the macro that changed formatting to currency zero decimal places of a single cell. Slash would bring me up to the menu, highlighting the word file. Right would highlight the word edit, return by the tilde, I choose the edit menu—if you'll excuse me for a moment. I need to refer to my printout here because I can't see the macro any longer. So return would accept the edit menu.

MR. REBACK: Excuse me, sir. You referred to [4-109] a printout. What was that, Sir?

THE WITNESS: What I have in front of me is an outline to sort of remind me of the steps we're going through.

MR. GUTMAN: Mr. Reback is welcome to a copy, but I'd really appreciate it if he didn't interrupt the demonstration. We're trying very hard to get done before the lunch break.

MR. REBACK: Might I just see it for a second?

THE COURT: You may.

MR. REBACK: I just want to know what it is.

THE COURT: You may.

MR. REBACK: I'm sorry. Where were you talking about, sir?



THE WITNESS: I think on page 8—7. Excuse me. Because I'm trying to recreate this macro manually, and by doing so I brought something up on the screen that covers the macro itself. I'm referring to the piece of paper to remind me what the macro was.

MR. REBACK: Thank you, Sir.

A. So the macro was slash to bring up the menu, right, followed by two tilde, two enters, so the first chose the edit menu, the second will choose I suppose copy. That was followed by the command right two times, so I would choose right, right, and it appears that I'm now in the copy menu [4-110] in the Quattro Pro menus, and then choose enter, and at this point it prompts me to type in the macro, we'd type in a zero if we're in 1-2-3 for zero decimal places. It doesn't make sense. We're not in the right context here, and then I would hit enter and get an error message because it's prompting me for cell location and I'm typing in a value.

Q. So the cursor movements described in the macro would not work on the Quattro Pro native menus. Is that right?

A. It appears to be correct, yes. If I walk through them it appears to be totally different demands.

Q. Now, could you turn on the Quattro Pro equivalent of step mode, please, and show us how macros H and I execute.

A. If I hit the slash key, move over to the tools menu, choose macro from the tools menu, move down to the choice for debugger, choose the debugger menu, and say yes, now on the bottom right of the scene it says debug which indicates that I've turned that feature on in Quattro Pro, and now you'd like me to execute—

Q. Yes. Could you first execute macro H and then macro I, but—

A. To execute macro—

Q. I'm sorry. Have you turned on the Key Reader? I don't remember.

A. Yes, I believe we have. Let me just confirm that. Slash tools, macro—yes, the Key Reader is turned on.

[4-111] Q. Fine. Now could you try macros H and I to see whether they execute.

A. H would in 1-2-3 format, the current cell as currency zero decimal places. So Alt H pops up what they call a debug window and it says trace window on the bottom, and then I can press the space bar to walk through this macro.

The first few times I press this space bar nothing appears to change on the scene. Now when I press the space bar I get that format menu that we had seen earlier in some of the macros, some of the interactive macros.

Continue to move through this and what happened as the macro said right, it moved right through the menu.

Q. Which in this case is down?

A. Which in this case is down, that's correct. And then it prompts for the number of decimal places and accepts that. So the net result of this macro is the same as it has been in 1-2-3.

Q. Now could you try the same thing with macro I, please.

A. Yeah. Macro I was the macro data for the column width, so I'll go over to column G that has that wired column and I'll hit Alt I to run the macro. I hit that debug window, trace window. I'll press the space bar to walk through that, and so what's happening in that debug window is that each time I hit the space bar a different [4-112] part of the macro, a different individual command in the macro is highlighted, and I'll point out if I see something happen on the screen other than that.

So it's moving through the macro in the debug window. It's not apparent to anything that's happening. Now when I get to the point where I'm highlighting the number nine, which in 1-2-3 is where I would enter, the column width to be nine characters, I see a prompt on the top of the screen asking me to alter the width of the current column. The nine goes into that entry, and then it accepts it so the end result is that the macro generated those same results in Quattro Pro.

Q. Okay. Now let's try the same thing with Quattro Pro for Windows, please, macros H and I.

A. So macro H—

Q. And again before we do it, could you please check to make sure that the Key Reader is turned on; and if Quattro Pro for Windows has something comparable to the step or the debugger, could you turn that on, please.

A. First I'll check for the Key Reader, so I'll go into their property menu, choose application. Again I'll use the mouse to choose the macro settings, and I can see that the Key Reader is in fact turned on.

Q. So it stayed on from the last time?

A. Yes.

[4-113] Q. And now could you—

A. Now I'll go into the menu again and choose tools, macro, and I'll turn on their debugger.

Q. Okay. Now would you please step or debug your way through macros H and I.

A. Pull down the control key and press the letter H—

MR. REBACK: Excuse me, your Honor. I do object to that question. Stepping and debugging are not the same thing. Lotus can only step. This product can debug.

THE COURT: The objection is overruled. I understand the distinction you're making. I've seen it, but the objection is overruled.

MR. REBACK: Very well, Sir.

A. I'll press down the control key and hit the letter H. I get some sort of dialogue box coming up with a number of commands in it, as it did in Quattro Pro for DOS it highlights the individual commands. If I press the space bar to do the equivalent, I get to the slash menu in 1-2-3 it executes the slash, and I see this box pop up on the screen. It's vertically longer than it is horizontally wide. There appears to be some sort of dark color at the top of that, and then some other cursor of some type or other dark colored box within that box, but I don't know what that is.

If I press the enter key again to generate a [4-114] right in the 1-2-3 menus, this would have moved across the menu. If

I press the space bar that cursor that I saw in that box that popped up moved down what looks to be one row or so but it moved down a position.

If I press the space bar again to execute the next command in the macro, which was a tilde or a return, the box appears to have changed shape—well, not so much shape, but just seems to be higher or longer vertically than what it was before; and, again, the cursor seems to be at the very top of that box.

If I press the space bar again, which was another tilde in 1-2-3 which would have chosen another menu in 1-2-3, this time the box changes both height and width and the cursor itself changes size in the box, and again the cursor is inside the box.

The next two commands in the macro were right, right, which in 1-2-3 moved me in the format menu two positions over to highlight currency. If I press the space bar, what I see is that that cursor was in that box that's popped up on the screen has moved down what appears to be one position; and if I press the space bar again to execute the second right command, it moves down another position.

At this point if I continue to press the space bar one more time I get a dialogue box of some sort that prompts me for enter number of decimal places. If I press [4-115] space, again, the macro enters a zero into that dialogue box, and then pressing the space bar one more time accepts that zero; and finally the last column—the last command in the macro accepts the current cell as the cell to be modified. So the end result in this was that I got to change single cell formatted as currency zero decimal places as I had in 1-2-3.

Q. Okay. Now could you do the same thing please stepping through macro I.

A. I'll move my cursor over to column G, which is the column that was—or is currently 15 characters wide. I'll choose control I. Again, I get the macro debugger box on the screen in Quattro Pro for Windows. Pressing the space bar which is the first command in the macro pops up, again one of these boxes with no words in them, but it's long, long vertically, narrow horizontally and it appears to have some sort of cursor in it.



Pressing the space bar again does an enter command and it's not obvious to me that anything has changed in that box at this point. So space bar again does a right command in the macro, and that cursor in that box seems to move down one. Space bar again makes it appear to move down another position. Third time makes it appear to move again which is—1-2-3 will go those three right commands we've done. It's moved me horizontally through the menu to choose [4-116] a particular submenu.

The tilde in 1-2-3 would have chosen a submenu, and now I see that box has changed size again with the cursor at the top of it, which has only four or five lines in it, defining the line and inserting the height of that cursor. Enter again brings up a dialogue box that prompts me to alter the width of the current column. The macro then puts the value nine in there and accepts it, and the end result is the column is now nine characters wide.

Q. Mr. Roshfeld, the macros you've been showing us so far have been fairly simple. Have you prepared one that is more complex?

A. Yes, I have.

Q. Could you switch back to Lotus 1-2-3, please, and show us that macro.

A. I use the Windows hot key to move back to 2.01. I page down, yet, again, you can see on the top part of this screen a much more complex macro back slash J.

Q. And before I ask you to execute it in step mode, let me just ask a couple of questions about some of the notations here.

In curly braces on the first line it says: Go to start. Could you explain that, please?

A. The reason that's in the macro is that the cursor goes to the appropriate position at the beginning of the macro. [4-117] So the go to command within braces is something that's built into 1-2-3. It's just a built-in command that allows the user to move the cursor in the spreadsheet; and I've defined a range name called start to just go to a particular location.

The reason I put this in the macro is because I was inserting in rows all over the place. I wanted to make sure when I started the macro it went to the correct location.

Q. Okay. And on the next line of the macro, second set of curly braces in, it says right two. What's that notation mean?

A. 1-2-3 allows you to do this rather than having to put the word right multiple times. So if I wanted to do six rights, rather than having to say right within braces six times, there's various short cut notations. One is to follow the word right by space and number in getting the number of positions.

Q. So right two or right eight means move the cursor wherever—

A. Move the cursor wherever it is whether in a menu or on the worksheet right that many positions.

Q. Okay. I see end in the same line. What's that?

A. End is a command in 1-2-3 that can be used either manually or in a macro in conjunction with another cursor [4-118] movement command to the move to the end in a particular location.

So, for example, if I had a long column of numbers and I wanted to delete that whole long column, in the range erase command when this prompted me for location, I could choose end down to indicate that the macro should highlight all the way down to the bottom of the column.

If I use end in combination with right, it would highlight all the way to the right, and up and left would work the same way in conjunction with the end command.

Q. Now what does this macro do before we see it.

A. This macro will do essentially three things. The first is it will move the cursor to a location called start, which is one of the options in the tables that you see in here.

The second thing it will do is change the formatting of the numbers in that table from what it's currently global formatted or currently two decimal places to a format of currency zero decimal places. It will then reset—it will then go into a graph menu and do a reset to clear out any previous settings that had been there, sort of house keeping; and then it will build a graph from scratch after its reset all the settings

by choosing the type of graph setting, the individual ranges for X, A, B, C and D. The X range would be the product names. A, B, C and D will [4-119] correspond to those quarters shown in that table, and then once it builds the graph it will then display the graph on the scene.

Q. Okay. Now could you—and in the interest of time you could just step through it without describing each step just slowing it down enough so that we can all hear. If you'd step through the execution of macro J.

A. Alt G to Alt J, and now I'm going to step through it. And what's happening is the macro is executing, and those commands such as right and left are moving the cursor through the menus.

One thing I'd like to point out is that the macro system is intelligent enough that if it says right space four or right space two, it will not refresh the scene in the midst of that cursor movement, which is why it appears when I'm in step mode that the macros are jumping around a little bit, because internally it's doing that movement but not redisplaying each time.

So I've chosen the type of graph. Now I'm choosing the X range, choosing the A range, which is key one; the B range which was key two; the C range which was key 3, the D range, which was key four, and now viewing the graph.

Q. Okay. Now, could we quickly move to Quattro Pro Quattro 4.01.

[4-120] A. Yes. Okay, in Quattro Pro 4.01 I have the exact same file, so it's the same macro.

Q. Could you check to make sure Key Reader is on and the debugger is on.

A. Slash, tools, macro.

Q. It stayed on?

A. Yes. The debugger is still turned on and the Key Reader is still turned on.

Q. Great. Now if you could again quickly step through this macro in execution in Quattro Pro 4.01.

A. So I'll choose Alt J to execute the macro, and I'll somewhat briskly press the space bar to move through the macro.

You see at this point that it did pop up a menu and prompted me to this number of decimal places to format, but for many of these other commands I don't necessarily see a menu coming up. I did just see a menu for the type of graph, and I am seeing some changes to the prompt line indicating which graph series that I seem to be setting, and the last result is that it displays that graph.

Q. Okay. Could we try the same thing in Quattro Pro for Windows, please.

A. Okay. Press page down. I assume you want me to check on the Key Reader?

Q. Please.

A. Lucky guess.

[4-121] Alt key to access the macro—the menu, choose tools, I'll choose macro. This option allows me to disable the debugger which tells me the debugger is already turned on, so I'll escape out of that. Actually on the bottom right of the screen you can see debug. I can also choose the property application as I did before, choose macro with my mouse, and I can see that the Key Reader has stayed on.

Q. So that stayed on?

A. Correct.

Q. Okay. Now if you could step through the execution of this macro, please.

A. On this macro, back slash J macro, Quattro Pro for Windows is control J. I see the macro debugger window.

First thing it does is go to the range called start. And now as it's executing commands that in 1-2-3 would have walked it through the menu, I've seen some of these boxes come up on the screen and the cursor appears to move. Sometimes the box changes size and shape, sometimes the cursor appears to move within a particular box.

Occasionally I see some sort of indication at the top of the screen that it's changing a particular graph series by popping up a little—I don't know what they're calling it in Quattro Pro. It looks like a little dialogue box or input box; and again the menus seem to come back as I walk through the macro.



[4-122] And the last step of the macro is to do that same graph. The graphs do appear slightly different in each of the products, but they're all stack bar graphs showing the same data with the same X range and the same data points.

Q. Okay. Now, the last two macros you prepared, if you can escape out of the graph. Let's move to your last two macros, macros R and W, and maybe we can learn something about those boxes that appear on the screen for Quattro Pro for Windows.

A. The macro—

Q. Could you tell me what macro R does to it?

A. The macro back slash R does the slash which in 1-2-3 would bring up the menu. R, which chooses the range command from the top line menu, and then pauses using that curly brace with a question mark inside for user input; so if I ran this macro in 1-2-3, I would get slash range, and then I could do whatever I wanted from inside the range menu.

Q. Let's run it in Quattro Pro for Windows and see what happens.

A. So to run that macro I choose control R. I turn off the debugger or—

Q. Yeah, why don't we turn off the debugger so that we can see that.

A. Let me break out of this, go to the tools menu again, choose macro and choose to disable the debugger.

[4-123] Q. Now let's try macro R, again.

A. If I choose macro R by pressing control R. The only indication that something's going on is on the bottom right corner of the screen it says macro and it says menu. At this point if I were in 1-2-3 I would know that I could choose F for format, S for scientific, put in one decimal place, and enter, and then highlight a range to format.

Q. And it worked?

A. Yes, it did. I was able to do the same keystrokes from that point on that I would have been able to do in 1-2-3.

Q. Let's try macro W and see what happens when you use that.

A. Okay. Macro W simply does a slash command to bring up the menu, and the letter W to choose the worksheet menu command; and then it pauses once I'm inside the worksheet menu.

So if I run that macro by choosing control W, again I see on the bottom right-hand corner of the screen it says I'm still in the macro and the menu, and I could choose let's say I for insert, R for row, highlight where I wanted to insert a row, perhaps underneath those titles there, and press enter and it would insert a row in that location.

Q. Now, can you move back and forth using macro R and macro W? Can you move back and forth through the levels of [4-124] the menus as if you were in 1-2-3?

A. I believe I can. If I choose to run that same back slash W by pressing control W, and I choose insert, I now see a box that looks like it has two choices in it. In the 1-2-3, that position would be column and row. If I escape back out at another location I could choose global default, other, international, or I could escape back out and choose column, set width, I may alter the width of a column. So, yeah, it appears that I can, and I just broke out of that macro at the same time. I can work my way through those menus using the same keystrokes as I could in 1-2-3.

MR. GUTMAN: I have no further questions, your Honor. Thank you, Mr. Roshfeld.

MR. REBACK: We are going to have some questions. Might we take the break now sir?

THE COURT: All right.

MR. REBACK: May we have the break till 2:30? Would that be too difficult?

THE COURT: No, I'll permit it.

MR. REBACK: Thank you, sir.

THE COURT: All right.

MR. GUTMAN: Thank you, your Honor.

THE CLERK: All rise.

(Lunch recess taken at 12:44 p.m.)

\* \* \*

[4-126]

## DIRECT EXAMINATION

BY MR. REBACK:

Q. Sir, could you once again state your name for the record?

A. Yes, Robert Warfield.

Q. And could you briefly describe your background for the Court.

A. Yes, I grew up in Midland, Texas, and went on to get my bachelor's in computer science at Rice University.

Q. Where do you work now, sir?

A. I work at Borland International.

Q. What is your position there?

A. Vice-president of research and development.

Q. Are you familiar with the product known as Quattro Pro for DOS, sir?

A. Yes, I am.

Q. And did you have a role, any role in the development of that product?

A. Yes, I was responsible for that product.

Q. Sir, would you please give us a demonstration of the most current version of that product?

A. Sure. That would be Quattro Pro DOS Version 4.01.  
[4-127] Let me just bring it up here.

(Pause.)

Okay. As you can see here, we have the program on the screen.

Q. Yes, sir. Is that in the default mode?

A. Yes, this is the way the program normally comes up as installed.

Q. Okay.

MR. REBACK: I want to do just a couple of preliminary things just to establish the record here, your Honor.

THE COURT: All right.

Q. Can you show us where the menus in Quattro Pro for DOS are found, sir?

A. Yes, the menus are along the top of the screen here where I'm pointing with the mouse cursor.

Q. Are those two-line moving cursor menus?

A. No, these are pull-down cascading menus.

Q. How does the user select a menu, sir?

A. Well, for example, if I wanted to bring up the graph-type menu, I would place my mouse cursor over graph, click the left button, move down within the pull-down menu to graph type, click on graph type, and that would then bring up the cascading graph-type menu.

Q. All right. Sir, can you take us up to the top line of [4-128] the menu bar, please.

A. Certainly.

Q. These menus that I see across the top and on the screen, are they 1-2-3 menus?

A. No, this is our native menu tree.

Q. Can you demonstrate to me the 1-2-3 menus?

A. No, I cannot.

Q. Why can't you?

A. The 1-2-3 compatible menus are not included with Quattro Pro 4.01.

Q. Are the 1-2-3 menus anywhere in the current version of Quattro Pro for DOS?

A. No, they're not.

Q. Okay. Now, for the purpose of demonstrating a couple of things to the Court, if you would please move the cursor down to the line beneath the menu bar.

A. Okay.

Q. Could you tell us what that is, sir?

A. This line here that you see across the screen is something we call the speed bar. It contains a series of buttons that the user can click on with a mouse in order to initiate commands.

Q. Is that part of the menu, sir?

A. No, that's part of the Quattro Pro user interface.

Q. How does the button bar work again?



[4-129] A. the user would simply bring their mouse cursor over the button they're interested in and click the left mouse button.

Q. Can you use these buttons without a mouse?

A. No, you cannot.

Q. Are you familiar, sir, with Lotus Versions 1, 1A or 2.0?

A. Somewhat.

Q. Are you familiar with Lotus Version 2.1 that you saw today?

A. Yes.

Q. Does that work with the mouse?

A. No.

Q. Does it have buttons, to your knowledge?

A. No, it does not.

Q. You know, when Mr. Roshfeld was demonstrating this product, I believe the product now before us, I believe he said that it was in text mode. Is that the default mode for the product?

A. Not for this machine, no.

Q. Could you tell us the steps you would go through and demonstrate them to put it in text mode.

A. Sure. In order to do that, you bring your mouse cursor over to the options menu, click with the left mouse button, move down with the cursor to where it says display [4-130] mode and click once again, and here we see all the different modes listed. In order to go to text mode, we would select in mode 80-by-25 by placing the mouse cursor over it and again clicking the left button, and now you see Quattro Pro displayed in text mode.

Q. And this is the way Mr. Roshfeld demonstrated the product?

A. Uh-huh.

Q. You have to be verbal, sir, for the record.

A. Yes, sir.

Q. Thank you.

Could you take us now back to the default mode.

A. Certainly. I do that in just the same way. Go back to the options menu with the mouse cursor, click, move down

to display mode. Within that cascading submenu I move down to WYSIWYG and I click, and we're back now in graphics mode.

Q. Sir, was Quattro Pro optimized to be used with a mouse or keyboard?

A. Quattro Pro was optimized to be used with a mouse.

Q. Bearing in mind the Court's admonition to me earlier, what does optimized mean?

A. That just means that it's a lot easier to use the product if you have a mouse.

Q. Thank you.

Can you run a Lotus macro with this version of [4-131] Quattro Pro DOS?

A. Some macros will run if you turn on the Key Reader, yes.

Q. That's the feature that Mr. Roshfeld demonstrated earlier today?

A. Yes.

Q. Where in the native mode menu tree would I find the Key Reader, sir?

A. Would you like me just to turn it on?

Q. Yes, please go ahead.

A. I move up to the tools menu with the mouse and click again, move down to the macro submenu, click, and down at the bottom of this menu we find Key Reader. If we click on that, it says no/yes. To turn it on we click on yes, and now the Key Reader has been enabled.

Q. Who created the Key Reader feature?

A. I came up with the idea for the Key Reader after I was asked by Philippe Kahn and Bob Kohn to try to find some way to run Lotus-compatible macros under the native menu trees that were similar to Excel's translator feature.

MR. GUTMAN: Your Honor, excuse me. We had a stipulation that the only live testimony was going to be demonstrations. They called Mr. Warfield as their person to do the demonstration. Instead what he is trying—what the questions elicit—what the last question clearly called [4-132] for is his testimony concerning the history, and I thought that our

stipulation provided that that was not what we were doing by live testimony and that the record on these matters was closed.

MR. REBACK: The record hasn't even been offered yet.

THE COURT: Well, wait a minute. Under the stipulation, wasn't it agreed that the record would not include live testimony?

MR. REBACK: No, sir, we were entitled to one live witness for a demonstration.

THE COURT: Oh, but what the objection is is that you're trying to use it not for a demonstration but for testimony that is not explaining the demonstration, but is giving other evidence bearing on other issues in the case than just the demonstration.

MR. REBACK: I see.

MR. GUTMAN: And I would—

MR. REBACK: I don't know what to say on that point. I thought I was entitled to do that. That's the reason I have this witness.

THE COURT: Let me see the stipulation.

MR. REBACK: My point about this, it provides context for what's shown on the screen, but we'll hand up to you a copy of the stipulation.

[4-133] (Document handed to the Court.)

MR. REBACK: The relevant paragraph I believe is paragraph 4, your Honor.

MR. GUTMAN: Also paragraph 3, your Honor, in which both sides waive any live testimony apart from the demonstration.

THE COURT: Well, I think I must sustain the objection. As I read the stipulation, the purpose of the witness to conduct the live demonstration is to conduct the live demonstration, not to talk about other issues in the case.

MR. REBACK: All right, your Honor. I apologize and I will keep that ruling in mind as I move forward.

MR. GUTMAN: I would move to strike the last answer, if I may, because it was clearly contrary to the stipulation.

THE COURT: Motion sustained.

MR. GUTMAN: Thank you.

BY MR. REBACK:

Q. Mr. Warfield, what does the Key Reader do?

A. Well, quite simply, the Key Reader takes the key strokes embodied in a macro and using its own internal data on the overall hierarchy and the pickletters involved there, it then translates those keystrokes into our menu [4-134] equivalents and turns those menu equivalents over to the program for execution.

Q. What version of 1-2-3 macros was the Key Reader intended to run, sir?

A. Version 2.01.

Q. Will it run Version 2.0 macros?

A. Don't know.

MR. GUTMAN: Your Honor, apart from the fact that the computer is turned on and that Mr. Warfield is sitting with a keyboard in front of him, it would be hard to tell this was a demonstration.

MR. REBACK: I'm talking about features of the product now, your Honor. I mean, I really am. What macros does it run, what macros doesn't it run, how does it run them.

THE COURT: Well, I don't think that's correct. Mr. Reback, I think you're fighting your own stipulation.

MR. REBACK: Well—

THE COURT: I want an explanation of what's going on here, not an explanation of what's not going on. That's not a part of the demonstration unless it helps me understand the limitations of the demonstration itself, and the issue about 2.0 and 2.1 is not within that category.

MR. REBACK: If I had phrased the question to [4-135] ask the witness if he could run a 2.0 macro, would that meet your Honor's objection?

THE COURT: I don't see how that would make a difference. That's not asking me about what—something about this demonstration. It's asking me about another question on which we've had some further colloquy earlier today. And I understand that you would like to show me that features of



this demonstration do not apply to 2.0, but that's not a part of the demonstration. If you want to offer testimony on that subject, let's face up to it that that's what you're trying to do.

MR. REBACK: I will separately do that, then, your Honor.

THE COURT: All right.

MR. REBACK: I apologize.

BY MR. REBACK:

Q. Mr. Warfield, what does the user—strike that, sir.

This morning we saw Mr. Roshfeld run a number of macros that he had created for the demonstration. What does the user usually or typically see when the Key Reader is running a macro in this product?

A. It just runs the macro and you would see the native Quattro Pro user interface and whatever results the macro produced.

Q. Is there a feature in this product that we can [4-136] demonstrate to show the Court how the Key Reader works?

A. Sure. I think our menu editor command would be appropriate for that.

Q. Please do that, sir.

A. Okay.

Q. Please demonstrate that feature for the Court.

A. So I'll move over to the options menu with my mouse and I'll click, and then I move down to startup and click again. Near the bottom of this menu we see the edit menus command which I'll click on, and what this causes the program to do is for its menu editor to take the menus that were currently in use in the product and bring them in and display them so you can see how they look.

Q. All right. Now, I see some menus on the screen now on the spreadsheet portion of the screen. Are those Lotus menus?

A. No, these are native menus.

Q. Where are these menus stored, sir?

A. These menus are stored in one section of the QUATTRO.MU file.

Q. Now, are the words that we see there part of the Key Reader portion of that file?

A. No.

MR. GUTMAN: Your Honor, again, now we're talking about the internals.

[4-137] MR. REBACK: It's demonstrated in the product, your Honor, as shipped.

THE COURT: Let me hear the objection first and then I'll hear your response.

MR. GUTMAN: Your Honor, Mr. Warfield is now being asked to describe the internal file structure of the program. Again, there is an effort to supplement the record that we had stipulated was not being supplemented by live testimony. There are documents which I understand they want to offer on this subject, there's deposition testimony of this gentleman that's been taken, but this is not a demonstration when he asks now what file inside the program is that—

THE COURT: The objection is overruled.

Q. Where are the Key Reader menus—I'm sorry. Strike that.

Where is the Key Reader data displayed in this menu editor, sir?

A. Well, what you'd have to do to see the Key Reader data—and I'll just do it here as I'm talking—is move the cursor down past all these words that are part of the native menus until you get to this bar here. The bar has a plus on it signifying that if I strike the plus key, I can then open up the bar and cursor down into this section below, and now we're in the Key Reader section.

[4-138] Q. I don't see any menus there, sir.

A. Well, there aren't really any menus here. The Key Reader just contains an embodiment of the hierarchy that's needed there and you can see in this panel at the top that I'm pointing to with the mouse that there's also a menu key indicated, a portion called actions which is basically what we call our menu equivalents, and a few other pieces of information.

Q. Okay. I see something to the right called menu key at the top there. Could you move the cursor over to that?

A. Certainly. That's right here.

Q. I've heard the term pickletter. Is that the—

A. Same thing, yes.

Q. What is the relationship between that W where the cursor is and that highlighted red plus sign on the screen?

A. Well, if you will, this W is the letter that has to be encountered at this point in order to proceed to the next level during macro execution.

Q. What does the W stand for?

A. For worksheet.

Q. For the word worksheet. From the 1-2-3 menu command hierarchy, sir?

A. Correct.

Q. Is the word worksheet anywhere in the Key Reader portion of the QUATTRO PRO.MU file?

[4-139] A. No, it is not.

Q. Now, using the menu editor feature, please demonstrate the order of the pickletters as they appear in the Key Reader portion of the QUATTRO.MU file.

A. Do you want me to do that specific macro?

Q. Just open it up so the Court can see how it looks opened up.

A. So here's the first level here on the left. We're sitting on W. If we hit plus, that opens up and you can see we go on to the next levels.

Q. Okay. Could you go up to the first plus on that column.

A. Okay.

Q. What pickletter is that plus, sir?

A. That one is a G.

Q. Can you show me where on the screen that's demonstrated?

A. You can see that if you look again up at the top right next to where it says menu key there. I think it's in red. You can see a G.

Q. It is in red. Thank you.

Now cursor down to the next plus.

A. Okay.

Q. What pickletter is that?

A. Now we have the pickletter I.

[4-140] Q. Okay. Could you cursor down to the next two and tell me what they are, sir.

A. We then have a D followed by a C.

Q. Could you open up the C, sir.

A. Sure. If I hit the plus, C opens up.

Q. I don't see anything else there. Are there any other pickletters?

A. There are some other letters you can see by moving the cursor to the right. There are no pluses displayed because there's no further submenus, but you can see as I move around here, there's an S, there's an R, there's an H. There's a bunch of them here.

Q. Is the order in which these pickletters are listed here in the Key Reader portion of the QUATTRO.MU file the same order as the first letters appear in the Lotus 1-2-3 menu screens?

A. No.

Q. All right. Is this something that you wrote for this demonstration, sir?

A. No, this is a facility that's available to all Quattro and Quattro Pro users.

Q. If we went across the street to a software store and purchased a Quattro Pro current version, this would come with it?

A. It would be right there.

[4-141] Q. Thank you.

I believe you just told me that the order of the pickletters is not the same as the first letters in 1-2-3. Does it reflect the order of the 1-2-3 commands in any respect?

MR. GUTMAN: Objection, your Honor. I mean, I believe he's—

THE COURT: I'll permit that question.

A. Only to the extent that that order is relevant for macro execution.

THE COURT: Well, I think I better not permit the question in light of the answer that obviously is going beyond the demonstration to an expert opinion. And the stipulation I read



a moment ago said we were not going to have an expert as the demonstrator, didn't it?

MR. REBACK: Yes, sir.

MR. GUTMAN: Yes, your Honor.

THE COURT: I don't want any expert opinions, then, about the case.

MR. REBACK: For purposes of guidance, could I just hear the last question and answer to which the Court sustained an objection?

THE COURT: You may.

MR. REBACK: Very well, your honor.

(Last question and answer read back by the court [4-142] reporter.)

Q. Suppose that—strike that.

Earlier today I saw Mr. Roshfeld demonstrate a macro that he had written with the keystrokes RFC. Do you recall seeing that, sir?

A. Yes, I do.

Q. Could you demonstrate how the Key Reader would just translate the letter C by itself?

A. No, that's not possible.

Q. Why is that, sir?

A. Well, the Key Reader would have no idea which C within the menu trees to go to. There are many of them.

Q. How does the Key Reader know which C to go to?

A. It relies on the order in which the letters are presented to it and its understanding of the hierarchy of menus.

MR. REBACK: Your Honor, may—I understand the Court's objection. I would now like to ask a question for the purpose of a proffer. I don't mean to quarrel—

THE COURT: Go ahead.

Q. Is there any way to make a translator without embodying the hierarchy?

A. No. The hierarchy—the order involved in a computer language, its syntax, is an integral part along with the words or vocabulary that are used. That's just basic [4-143] computer science.

THE COURT: Well, you know, I don't need expert testimony to know that, do I?

MR. REBACK: No, sir. You said it before this case.

THE COURT: Well, apart from what I've said. I mean, it's a matter of common sense once you understand what we're talking about.

MR. GUTMAN: If the point is, your Honor, there somewhere has to be something in the program that helps it interpret, then absolutely. If the point is, as will be argued later, they had to do it this way, then it's clearly not. And this is a question and answer beyond the scope of the stipulation.

THE COURT: Well, I'll allow the question and answer to stand. I don't think it takes any expert testimony to tell me that's so, and so we don't need to waste time on it. Go ahead, next question.

MR. REBACK: Yes, sir.

Q. I believe Mr. Roshfeld earlier today demonstrated a macro slash WIR. Do you recall seeing that, sir?

A. Yes, sir, I do.

Q. Could you use the menu editing feature to demonstrate that macro, how the Key Reader would deal with that macro.

A. Sure. Basically what would happen is that as the [4-144] macro executed, those keystrokes would be taken from the spreadsheet and presented to the Key Reader one by one. So first it gets a W of the WIR and it scans down this first column of information. And let me just—okay. Now it looks more like a first column. This is all format. It scans down the first column of information until it finds a W. In this case, the very first position we're in has the menu key W which I'm pointing to with my mouse cursor.

Okay, fine. Let's go to the next level. If I press my plus key, I can then see the next level. I move on to the next level. The next keystroke presented to the Key Reader is then an I, so it scans down looking for an I. That happens to be the second menu key on the list. So we'll hit plus again and move into there.

Now it's got one letter left. It's looking for the R. The first one is a C, the second one is the R, and it knows it's reached

its appointed destination, no more characters. And we can see from this area of the screen called actions that we have identified a menu equivalent for WIR and that equivalent is row insert.

Q. So for the purposes of the record, where you're holding the cursor now is the menu equivalent, sir?

A. That's correct.

Q. Are those 1-2-3 commands, sir?

A. No, menu equivalents are the Quattro Pro native macro [4-145] language.

Q. For purposes of completing the demonstration here, cursor back up to the W portion.

A. Sure. Okay.

Q. Is there a menu equivalent for that?

A. There's not yet enough information available to the system for it to have found a menu equivalent. You can see only the general part of this is filled out. It's called basics. Since we're looking at W and that has to do with the worksheet, that's pretty basic to spreadsheets, but we don't know enough yet. We haven't gotten any more letters to know what—that is blank. There is no menu equivalent for this position.

Q. Okay. Now, sir, I'd like to take you out of the menu editor and bring you back to the display of the spreadsheet of Quattro Pro DOS Version 4.1.

A. Okay. I've just clicked on exit and we're now back in the spreadsheet displays.

Q. Incidentally, sir, to save us time here, is this menu editor—could you also have demo'd it for Quattro Pro 2.0?

A. Sure.

Q. 3.0?

A. Sure.

Q. Now, Mr. Roshfeld demonstrated in his demonstration that menus are sometimes displayed when the Key Reader is [4-146] running. I presume that's the case, is it not, he showed us?

A. Yes, that's correct.

Q. Okay. Could you bring up—I believe he used the macro RFC. I believe I saw that.

A. Yes.

Q. Actually, I guess the better one that he demonstrated for this purpose was WGF. No, excuse me. Excuse me.

MR. REBACK: This is a part that we're trying to accommodate your Honor and I'm a little ragged on this.

Q. RFC is the one that he used, but if you would edit that macro to leave it interactive, but taking away the C so that we could see that menu as it came up.

A. I don't think I have the diskette.

Q. I have the copy that was given to me by Mr. Gutman, and I'm now going to give it to you.

A. Okay. Let me insert this into the diskette drive. I'll click on file, retrieve, and I guess this must be on drive A. So it's called demo. I'll click on demo.

Okay. Here's the file, and I think the RFC macro you're talking about is this one that I've moved the cursor to.

Q. Yes.

A. Okay.

MR. REBACK: Frankly, your Honor, we don't [4-147] have the menu command hierarchy memorized here, so we're having a little trouble here.

Q. Can you get me back—display the menu that Mr. Roshfeld did, or would it be easier using the WGF macro? We know that will display it.

A. I can try with this macro. If you'd like me to edit it, I'll go ahead.

And I'm just going to backspace over this C, and then if I put—then put in the question mark at this point, I think that if we execute this macro, it will bring up the menu you're looking for.

So I'll go over to the tools menu and I'll select tools, I cursor down to macro, click. Down at the bottom we have the execute command. I click there. It's asking me which macro to execute. The cursor is already there, so I'll just click on enter, and I think this is what you're looking for here.

Q. Yes, sir, it is. Now, is that menu a Quattro Pro native menu?



A. Yes, it is.

Q. Can you get out of the macro and show me that same menu in the Quattro Pro native menu tree?

A. Sure. I'll just press control break to take the macro away. I'll move up to the style selection numeric format, and here you have the same menu.

[4-148] Q. Yes, sir. Thank you, sir.

Get us back up to the main menu bar, if you would, please.

A. Okay.

Q. I believe that Mr. Roshfeld also demonstrated the graph—the graph-type submenu. Can you pull that up in the native menu tree?

A. Sure. I just come over to graph, click on graph with my mouse, go to graph type, click again, and here we have that menu.

Q. Okay. Now, when Mr. Roshfeld showed it to us he showed us a pop-up box the same way we saw the other format menu.

MR. REBACK: And just for the record here, your Honor, it didn't have the pictures. It just had the words.

Q. Mr. Warfield, I take it since we're demonstrating this in the native mode—that's a native menu, is it not?

A. That's correct.

Q. Yet that menu—and that menu would appear when the Key Reader is running, would it not, sir?

A. That's correct.

Q. Are some of the commands in this submenu the same as the commands in Lotus 1-2-3?

A. Yes, they are.

[4-149] Q. Why is that?

A. From my perspective—

MR. GUTMAN: Judge—

THE COURT: Wait a minute. Sustained.

MR. REBACK: Give me just a moment, sir.

Q. Could I hear the question back just for the purpose.

THE COURT: Why is that? Why is that.

MR. REBACK: I'm sorry the one before that I lost track with the objection.

THE COURT: All right.

MR. REBACK: Give me just a moment, sir.

THE COURT: All right.

(Defense counsel confer.)

MR. REBACK: The objection to that question was sustained?

THE COURT: Yes.

Q. Will Quattro Pro DOS that we see on the screen here respond to a user simply by typing 1-2-3 keystrokes?

A. No.

Q. Earlier today I saw Mr. Roshfeld typing 1-2-3 keystrokes in the context of the macro. How can you reconcile your answer with what he showed the Court?

A. He typed some keystrokes—he seemed to have it pretty well memorized or something, because he was typing in empty boxes at one point and I don't really know what he [4-150] did, but he was running in a macro and those were macro keystrokes, and, you know, it wasn't what I'd call a 1-2-3 keystroke.

Q. If you could just take us back up to the main menu bar.

A. Sure.

Q. Without the Key Reader running, if we just tried to get our 1-2-3 keystrokes, would we be able to do that?

A. No.

Q. Can I write a 1-2-3 macro using the Key Reader, sir?

A. No, the Key Reader does not provide any assistance in writing macros at all. It's just like a phonograph. It just plays them back.

Q. Can I write 1-2-3 macros using Quattro Pro at all?

A. Well, you can sort of type in the characters here as we've done in some cases, but you wouldn't have any way to really tell what you were doing without any way to refer to what the menus were.

Q. In Mr. Roshfeld's demonstration I noticed that in Lotus 1-2-3 the clock is displayed on the screen. Do you remember seeing that, sir?

A. Yeah, I think so.

Q. Could you write a macro using the 1-2-3 commands to display the clock on the Quattro Pro screen?

A. I wouldn't really have any idea how to go about doing [4-151] that.

Q. Why is that?

A. I don't have the menus available to me so I can see which keystrokes are expected to do that in a 1-2-3 compatible way. I could certainly do it for our native menus.

Q. Suppose Mr. Roshfeld wrote such a macro and gave it to you and you wanted to edit some of the macro keystrokes high up in the macro. Would you be able to do that?

MR. GUTMAN: Object. Your Honor, now it's a hypothetical to an expert who's not supposed to be an expert.

THE COURT: How do you respond to that objection?

MR. REBACK: Well, I am trying to demonstrate the capabilities of the Key Reader. Since the Key Reader is for the most part invisible, I can only demonstrate those capabilities by asking the witness what it can do or can't do. I have no other way to demonstrate the capabilities. I'm not asking him as an expert.

THE COURT: Well, then I'm not getting the benefit of the demonstration. I'm getting the benefit of testimony, not a demonstration.

MR. REBACK: Well, your Honor, what the product-can't do is an important part of the case, we would [4-152] respectfully argue. I can't demonstrate that except asking the witness to do it and having him tell me he can't.

MR. GUTMAN: The current question, your Honor, doesn't ask about what the product can do. It asks about what this witness can do and based on his personal—

THE COURT: I think there's a point there. I have seen a demonstration earlier of what the product can do dealing with the very point that you're now raising, it seems to me. If I go back to the preceding question, all one would need to do in order to use this program would be to have a Lotus 1-2-3 menu sitting there beside him as he worked with this program.

MR. REBACK: I think that's probably right.

THE COURT: Well, so you're not demonstrating something the product can't do. You're demonstrating, I suppose—one of the captions here under specific makes the point. If I'm remembering correctly, this was not something that was reported on the record but something I saw on the screen under specific, the caption hide, and what you're now demonstrating for me or seeking to demonstrate not through the demonstration but through questions is that the capabilities of this product are deliberately hidden.

MR. REBACK: Oh, they're not deliberately hidden, your Honor, not by any means.

THE COURT: What was the meaning of that [4-153] caption hide up there?

MR. REBACK: I don't even know what your Honor—

THE COURT: Does the witness know what I'm talking about?

BY MR. REBACK:

Q. Is there a menu command hide?

A. Could it be in the Windows product? There is a hide under the redraw suppression.

Q. It hides the cells. Mr. Warfield, it hides the cells, is that correct?

A. No, it merely suppresses unnecessary display during macro execution. I think Mr. Roshfeld mentioned that they have a feature like that in 1-2-3 as well.

MR. REBACK: I don't think that has any relevance to what we're talking about here. I mean, if your Honor is going to take the position or has in his mind that we have deliberately hidden certain capabilities—

THE COURT: I haven't taken any position. I'm trying to hear evidence and understand it.

MR. REBACK: Okay. We have found the word hide. This is in the Lotus 1-2-3 menu tree and I believe it is under the column command, which is under the worksheet command.

MR. GUTMAN: There is a command, your Honor, [4-154] that allows you to hide a column of data. I'm not sure at what point in the demonstration your Honor saw it. I'm not sure.



THE COURT: I'm talking about this demonstration, not the demonstration I saw this morning, and it occurred in this demonstration at a point where you were showing me that the specific meaning of the pluses, for example, and of the execution was not revealed anywhere on the screen.

MR. REBACK: It's not in the program anywhere.

THE COURT: Well, you know now that we've talked about it. Take it back. I won't require you to interrupt what you're doing, but we'll come back to it if you want.

MR. REBACK: Very well, sir.

BY MR. REBACK:

Q. Are you familiar with Quattro Pro for Windows, sir?

A. Yes, I am.

Q. Okay. Could you bring that up on the screen?

A. Sure. Let me exit Quattro Pro for DOS and I'll double click on Quattro Pro for Windows so the Windows program will then start up.

And so here we have it.

Q. What was your role in the development of Quattro Pro for Windows, sir?

[4-155] A. I was also responsible for the development of Quattro Pro for Windows.

Q. Okay. I'm going to ask you to demonstrate, sir, the features.

First, what version are we looking at here?

A. You're looking at the most recent version, Version 1.0.

Q. Is this the same screen display as Quattro Pro for DOS?

A. No. As you can see, there are a quite a number of differences here.

Q. I believe Mr. Roshfeld made mention of access to these tabs along the bottom of the screen. Would you move the cursor there. What are those things?

A. Sure. This is a new feature we've come up with that uses these notebook-like tabs to allow you to step through a number of spreadsheets that are all contained within the same notebook file.

Q. All right. Now, if you move the cursor to the line under the top line menu, sir, could you tell me what that is?

A. This line here we call the speed bar. It contains a number of iconic buttons that a user can click on with the mouse in order to initiate commands.

Q. For example, let's move over to the scissors, picture [4-156] of the scissors there. What does that do?

A. The scissors here, as you can see by the message at the bottom of the screen, is a command where if you click it on, it will cause whatever cells you've marked over here in the spreadsheet to be moved onto the clipboard where they can then later be pasted back into the same spreadsheet or other files.

Q. Does Quattro Pro for Windows use a two-line moving cursor, sir?

A. No, it uses pull-down cascading menus with dialogue boxes.

Q. I've heard that term mentioned. Could you show me a dialogue box, sir.

A. Sure. If we go over to the file menu, click on file, move down to retrieve, click on retrieve, now we're seeing what's called the dialogue box here.

MR. REBACK: Give me a moment, sir.

(Defense counsel confer.)

Q. Does Quattro Pro for Windows display the 1-2-3 menus?

A. No, it does not.

Q. Does it contain the 1-2-3 menus?

A. No, it does not.

MR. GUTMAN: Objection. It's calling for a legal conclusion.

THE COURT: Well, I sustain the objection to [4-157] that question.

Q. Can Quattro Pro for Windows run 1-2-3 macros? I mean, we saw it today, so I presume it can run some of them at least.

A. Some, yes.

Q. Also has a Key Reader feature?

A. That's correct.

Q. And could you take us out of the dialogue box—

A. Sure.

Q. —and run through the steps to demonstrate to the Court how you turn on the Key Reader.

A. Sure. To turn on the Key Reader, I just take the mouse up to the top where it says Quattro Pro for Windows, click the right mouse button. I am then presented with a dialogue box again. If I move over here to where it says macro and I click there, we see here a section entitled macro options. The Key Reader you can tell by this check mark is actually already on, so at this point we can just click okay.

MR. REBACK: Just a second, sir.

(Defense counsel confer.)

Q. Is the default setting for the Key Reader on or off?

A. I think by default the Key Reader is off.

Q. Now, trying to shortcut some of this, sir, in Mr. Roshfeld's demonstration using interactive macros with [4-158] Quattro Pro Windows, he caused some blank boxes to appear on the screen. I believe he used the graph-type menu to do that.

Do you think using his macros you could just present the same screens that he did?

A. Okay. Well, let's try bringing up his file and see how we do.

Q. You can put in another macro?

A. If we want to just bring that up, slash GT.

Q. Will that do that?

A. I think so.

Q. Okay. Well, give it a try.

A. Okay. So this is for graph type. We'll put a question mark. As I recall, they had earlier turned on the macro recorder. Not the macro recorder. Debugger. Select debugger.

We can see by this lower indicator in the lower right that the decoder is turned on and execute this macro by clicking

tools, macro, and then execute. We're already in the cell containing the macro, so I'll just click okay.

We then press the space bar to move through, and are these the boxes you're looking for?

Q. Yes. Do you have any idea—well, strike that.

Was anything supposed to be in these boxes?

A. Originally we had planned to have 1-2-3 compatible [4-159] menus in these boxes.

Q. Why aren't there any menus in those boxes now?

A. Well, we decided to take the menus out in the summer of '92.

Q. Why do the boxes still appear?

A. It's a bug in the program.

Q. Well, if you could remove the command, why couldn't you just remove the boxes?

A. Well, actually it was pretty easy to delete all those words out of the file, but the code itself is quite complex. Making sure at each step that just the exact right thing was displaying under all possible conditions was more difficult. In fact, we didn't actually discover this bug until just shortly before we were ready to ship the product.

Q. Do you have any plans to fix this bug?

A. Yeah, we intend to fix it with the next release of the product.

Q. Is there any product documentation that tells you what if anything you can do with these boxes?

A. No.

Q. Is there any aspect of the on-line help feature that tells you what you can do with these boxes?

A. No, no. This is a bug. We don't document bugs.

Q. Could you cursor down in this box for me.

A. Let's try it. I think I'm now at a point where— [4-160] yes, I can cursor inside the box.

Q. Stop for a second. Could you tell me what command would have gone there?

A. Something to do with graph types. I can't be sure exactly where I am here.



Q. Okay. Could you press F1 for help and see if we can get some help as to where we are.

A. Sure. It looks like there's no help.

Q. So the screen says "Help not available"?

A. Yes.

Q. All right. Now, I take it that the user as a general matter can find information on the Key Reader through what, the help feature of the program?

A. All of the documentation of the program is a place where a user could go to find information on the Key Reader.

Q. Take me back to Quattro Pro 2.0, please.

A. 2.0. Let me exit here.

Okay. Quattro 2.0 is listed right here, so I'll double click, and we're in Quattro Pro for DOS Version 2.0.

Q. Now, you've mentioned various aspects of documentation for a program. What are the aspects of documentation for this program?

A. Well, you've got the printed materials that come with the program, you've got the on-line help file that comes with the program, and in addition there's a file with the [4-161] program called the read me file.

Q. What is a read me file, sir?

A. A read me file is just a file that's used by a lot of different software that contains addenda of various kinds, things that an end user wouldn't find elsewhere in the documentation that are late-breaking news that they need to be sure to check on.

Q. Could you demonstrate the read me file in this program, sir.

A. Sure. Probably the easiest way to do is that is, I'll select file, utilities, DOS shell, and we can see here by the prompt on the screen—I can't point to it—somewhere C hyphen backslash Quattro Pro 26. We're in the directory. And now if I just type read me, it brings up the read me file for Quattro Pro 2.

Q. Was this version of Quattro Pro the first version to have the Key Reader?

A. Yes, it was.

Q. Was the Key Reader mentioned in the documentation?

A. Yes, it was.

Q. Where is it, sir?

A. Actually it's mentioned in this read me file.

Q. Show me where. Show the Court where.

A. A couple of different places. If we cursor down, which I'm doing, you can see in the contents item number 21 [4-162] is macro Key Reader.

I can then use my page down key. I'll page down within this file to the point where we have item number 21, and I'll just bring that to the top of the screen, and you can see here this is the section on the macro Key Reader.

Q. Yes, sir.

MR. REBACK: Now, your Honor, we have previously marked this in hard copy, so I won't keep it on the screen unless your Honor is interested in seeing that.

THE COURT: All right.

Q. Is the macro Key Reader documented anyplace else in this program, like in the hard copy, for example?

A. No, it's not.

Q. Why is that?

MR. GUTMAN: Objection, your Honor.

THE COURT: Sustained.

MR. REBACK: Okay. I'm sorry.

Q. How would the user know to look at the read me file?

MR. GUTMAN: Object.

THE COURT: I'll permit that question.

A. Actually there's two different ways that users would know. Most experienced users expect to find read me files with software because most companies make a practice of providing such files. In addition, Borland provides a notice which I have here (indicating), it says "Read Me [4-163] First", that appears in all of our products directing the user to go to the read me file when they want to find something.

MR. GUTMAN: Objection, your Honor. Move to strike the answer. This is—first of all, in terms of what most users look

for, that's expert opinion. It's not within the scope of the stipulation. And again, this business of what's in the box or wasn't in the box is beyond the scope of the demonstration.

MR. REBACK: Well, I think.

THE COURT: Overruled.

MR. REBACK: Your Honor, if you just give me one more minute to pack things up.

(Defense counsel confer.)

BY MR. REBACK:

Q. Okay. Can you get me back into the menu editor, Mr. Warfield, so that we can find this hide command—it's in Quattro Pro DOS 4.0?

A. Let me try to go back exactly where it was. So it started up, 4.01. I believe we went to options, startup, edit menus and the menu editor, then read in the information.

Q. Okay. Are any menus being hidden here, sir, or concealed from view?

A. Well, we haven't expanded them fully, but you can get [4-164] them with plus and minus.

Q. Get me down into the Key Reader selection again down below the line, extend them out.

A. I'll hit plus and then cursor.

Q. Okay. Now, are any menus being hidden from view?

A. There's no menus, really, in the Key Reader.

Q. So the answer to my question is no?

A. No.

Q. All right.

MR. REBACK: Now, your Honor, in light of your Honor's prior rulings, maybe this is a proffer or summary exhibit. Let me just explain what I'm trying to do and your Honor can rule.

THE COURT: Go ahead.

MR. REBACK: I could have Mr. Warfield—it would take most of the afternoon—read into the record the order in which these pickletters appear or your Honor could just see them in chambers. We produced to the other side about three months

ago Defendant's Exhibit 520, which is the contents of the file, and I would like to simply have the witness authenticate that and say that the pickletters are in the same order as you see them on the screen.

THE COURT: Do you have any objection to that?

MR. GUTMAN: I'd like to take a look at what form. There are various things we were shown. All of them [4-165] were redacted.

MR. REBACK: No, this is not redacted. This is as shipped and this is exactly what we gave you. Let me place Exhibit 520 before the witness.

I should note for the record it is stamped "Confidential," your Honor, "Attorneys Eyes Only." May I now just ask the witness those two qualifying questions, your Honor?

THE COURT: Do you have any objection?

MR. GUTMAN: I'm sorry. Was the question whether I objected to this document?

THE COURT: No. State again what you wanted to—

MR. REBACK: I want to ask the witness if he will identify this as the human readable version of the Key Reader portion of the QUATTRO.MU file.

THE COURT: If you want him to do it through the demonstration and you can check it, that's fine.

MR. GUTMAN: I certainly don't want to waste the court time having him check it through the demonstration. I don't believe that one would actually see what's on this document if you were to do what Mr. Reback has threatened to have him do. And having him authenticate the document is I believe beyond the scope of the stipulation, but if he wants to do it, I will not object to [4-166] him doing it.

THE COURT: Now, I understand the purpose of what you're proposing is to do in a shorthand version of hard copy what would be shown by the demonstration. Mr. Gutman is telling me he has doubts that that is what the shorthand hard copy version would show if we went through the demonstration. I suppose if we can't get that resolved, we better just go through the demonstration.



MR. GUTMAN: If—if I might have a moment to consult with Mr. Reback, your Honor, we may actually be able to agree on something.

THE COURT: You may.

(Counsel confer.)

MR. REBACK: Mr. Gutman wants to cross the witness on this exhibit.

THE COURT: All right.

MR. REBACK: Let me just say—

MR. GUTMAN: I'll say that, your Honor. I don't have to do it.

MR. REBACK: Let me just say that for the purposes of the record I'm not going to take time to march down through there because the computer program is in evidence and any ordinary observer could cause these things to appear. So I think for the purposes of my argument I'm fine and so I need not belabor the Court on the point.

[4-167] (Defense counsel confer.)

BY MR. REBACK:

Q. Could we get—do you have any idea where the word hide or hidden—

THE COURT: I'll tell you where it appears. It appears where specific now is and there's a blank. Hide shows up in there at certain points. What is it that that means? Whether it's a menu, command or legend or explanation or whatever it is, what is it?

MR. REBACK: I think it's a menu equivalent.

Q. Can you get it up on the screen, Mr. Warfield?

THE COURT: I think it came up when you were demonstrating some of the macros.

Q. It's under column, Mr. Warfield. Can you find it?

A. Well, which one is column under? Do the Lotus guys know?

Q. I think it's off the worksheet command, the fourth one down, I think.

A. C?

Q. Expand it out, could you? Down one.

A. Hide.

Q. There we go.

THE COURT: Now, what is the function?

Q. What is that hide, sir?

A. It's just what Mr. Gutman was talking about, the same [4-168] command where you have the ability to take a column—these are general actions that take place on columns. That's why it says general up there. And you can hide it so you can make the column disappear from the screen.

Q. Is that a menu equivalent?

A. Yes, column hide—

THE COURT: Let me understand. When you say menu equivalent—

MR. REBACK: Yes, sir.

THE COURT: —you have been making a careful distinction throughout this demonstration between the menu line and—what did you refer to it as, the next line that had buttons?

MR. REBACK: Speed bar.

THE COURT: Is the speed bar also a menu equivalent?

MR. REBACK: No. As Mr. Warfield testified, the speed bar is not part of the menus in any respect.

THE COURT: Is it a menu equivalent? Hide is not part of the menu in any respect either, is it?

MR. REBACK: No, sir.

THE COURT: Why do you call it a menu equivalent?

MR. REBACK: All right.

THE COURT: I'm trying to understand your [4-169] terminology. You see, you're speaking to me with words that you're using in a specialized meaning.

MR. REBACK: Yes, sir.

THE COURT: And I don't know what that specialized meaning is and I'm trying to understand it.

MR. REBACK: I understand.

THE COURT: Why wouldn't I, thinking in a broader sense in the way we ordinarily talk about menus, think of the speed bar as a part of the menu or a menu equivalent even though it's not a part of the menu as you're using the term in a narrower sense than we ordinarily in talking about software programs use the term menu?

MR. REBACK: Okay. I should not have demonstrated the speed bar, because it's irrelevant to anything we're talking about here, but I do want to talk about the difference between menus and menu equivalents.

Menus are what you see on the screen, so in this product you can only see the Quattro Pro native mode. However, those menu commands are not processed in any respect by the software. They are translated into Borland's unique menu equivalents and then they are processed.

THE COURT: And that's processing in any respect? That's translating and then—

MR. REBACK: It is translating, sir, yes, sir.

THE COURT: All right. Now, let me see if [4-170] I've understood you. Where first a translation occurs, then you may speak of that, the thing that was translated, as a menu equivalent.

MR. REBACK: What it was translated to is a menu equivalent. What it was translated from was a keystroke, for example, or a menu command.

THE COURT: All right. I now understand the sense in which you're using it.

MR. REBACK: Yes, sir.

THE COURT: That doesn't mean that that's the only sense in which the word can be used or that it's the only sense that's relevant to copyright law. You understand, I'm simply trying to understand the evidence before me and I think I now understand the way you're using the term menu and menu equivalent, and you're using both of them as excluding other things that show up on the screen somewhere that help you know what to do to get the machine to function. And so in that respect, then, you use the term speed bar as not a part of the

menu in any sense, but it's also correct that it appears up there and one can click the mouse on it and make the thing function just as one can click the mouse on something in the menu line and make the machine function.

MR. REBACK: Yes, sir.

THE COURT: All right. I understand.

[4-171] MR. REBACK: Just one moment.

(Defense counsel confer.)

MR. REBACK: I've completed my examination, your Honor.

THE COURT: All right. Did you want to cross-examine?

MR. GUTMAN: I do, your Honor. I was under the impression that your Honor had another matter on, and perhaps if I could inquire as to our scheduling constraints, if any.

THE COURT: None. I don't think I have another matter on, as far as I know. Do I?

MR. REBACK: No, sir.

MR. GUTMAN: Your Honor, if I might have one moment.

(Plaintiff's counsel confer.)

## CROSS-EXAMINATION

BY MR. GUTMAN:

Q. Mr. Warfield, when you were showing this part of Quattro Pro 4.01 to the Court, I believe you testified that this Key Reader file contains the embodiment of the hierarchy that's needed. The hierarchy, the menu hierarchy you're referring to in terms of the Key Reader is the 1-2-3 menu hierarchy, isn't that right?

MR. REBACK: Excuse me. Wasn't the question [4-172] objected to? Did I get that one in?

THE COURT: Read me back the question.

(Question read back by the court reporter.)

MR. GUTMAN: I don't believe it's the same question that was stricken, but I can make it clearer.



BY MR. GUTMAN:

Q. You referred to a hierarchy, Mr. Warfield, in your testimony concerning the Key Reader and the outline form there. The hierarchy you're referring to is the hierarchy of Lotus 1-2-3 menus, isn't that right?

A. That's correct.

Q. Now, can you get out of this and escape back to the main screen, please.

A. Sure. (Pause.) Okay.

Q. Now, when you were trying to show the Court before how to get from the WYSIWYG mode, which this is, to character mode, you went to the options menu.

THE COURT: Now, let me take note here. You have referred to this as character mode throughout your demonstration this morning and now. It was referred to by Mr. Reback as text mode, but I understand you both to be talking about the same thing.

MR. GUTMAN: I understand it—

THE COURT: If I have misunderstood, I wanted that clarified.

[4-173] MR. GUTMAN: No, I appreciate that.

MR. REBACK: No, there's no distinction, but it is currently in graphics mode.

MR. GUTMAN: Which is WYSIWYG. Graphics and WYSIWYG are synonyms for these purposes as are character and text.

Q. Now, Mr. Warfield, in order to get into character or text mode out of WYSIWYG, you went to the options menu and then you found various commands and subcommands under there, isn't that right?

A. That's correct.

Q. There's an easier way to do it, isn't there, sir?

A. Not that I'm aware of.

Q. What happens if you push the character button, the one next to—

A. You mean click on it with the mouse?

Q. Yes.

A. Go to character mode.

Q. That's what I thought.

Now, in terms—

THE COURT: Well, let me see now. Do you now agree that was an easier way to do it?

A. Considering I didn't think of it, it wasn't easier for me.

(Laughter.)

[4-174] Q. Let's leave ease out of it. You'll agree with me, sir, that that is an available alternative to going to the options menu, right?

A. Yes, sir.

Q. Does the same thing by clicking on the speed bar, right?

A. Yes.

Q. Now, you saw Mr. Roshfeld's demonstration this morning. You have had his disk to work with or study or do whatever you wanted during the lunch break, which was extended.

Any of the macros that he showed this morning, would any of them have worked any differently if he'd done his demonstration in WYSIWYG mode rather than character mode?

A. I don't think so, but I haven't studied them that extensively.

Q. Now, the buttons on the speed bar you referred to don't appear, or do they, in character mode?

A. Yes, these are the buttons over here in character mode.

Q. And there's a—okay. So they're both in character and WYSIWYG mode, right?

A. Correct.

Q. Now, am I right, sir, that the format—

[4-175] THE COURT: Excuse me for a moment. Is the one difference that the button that gets you quickly to character mode is not over here on the right? Those are already there, is that right?

THE WITNESS: I think it's available if I click on the bar here. There simply is not the same amount of room. So if I click, you can get to it, but you're—

THE COURT: You're already there.

THE WITNESS: You're quite correct, your Honor.

THE COURT: Otherwise you're saying that what's in the column on the right is the same thing that was on the speed bar.

THE WITNESS: That's correct. It's just truncated so we present it in two pages, if you will.

THE COURT: All right.

Q. And you saw that character and WYSIWYG were available when Mr. Roshfeld was demonstrating 3.0 this morning, right?

A. I don't have a specific recollection of that, but yes.

Q. Now, I believe you testified that insert and row, which were menu equivalent commands, weren't commands in Lotus 1-2-3. There are such commands in 1-2-3, isn't that right, Mr. Warfield?

MR. REBACK: Excuse me. May I hear the question again?

[4-176] THE COURT: Yes. It may be read back.

(Question read back by the court reporter.)

A. My recollection was that my testimony was that the menu equivalent insert row does not appear in 1-2-3.

Q. But there's a command under worksheet, insert row, isn't that right?

A. Yes, couple of menu picks there, definitely.

Q. Now, if I heard right, when Mr. Reback asked you whether you could write 1-2-3 macros using the Key Reader, you said no. You could write 1-2-3 macros using these products, though, can't you?

A. If you knew what to do, I'm sure you probably could. You can edit text in all of them.

Q. You can create using the same sequence of characters in Quattro Pro 4.01 and in Quattro Pro for Windows a 1-2-3 macro, isn't that right?

A. If you give me a set of characters such as slash WIR and type them in, I can type it.

Q. In fact, without being prompted you did it, didn't you, in Quattro Pro for Windows when you were trying to recreate a macro, and you created a 1-2-3 macro that began with the apostrophe and then had the slash and then G and T and a question mark within curly braces? While we were all watching, you created that in Quattro Pro for Windows, is that right?

[4-177] A. Actually, in a sense I was prompted. I'd been looking at slash WIR all morning in Mr. Roshfeld's field, but yes, I typed that.

Q. And that was a 1-2-3 macro, right?

A. Yes.

Q. Now, I got the impression listening to your testimony about how Mr. Roshfeld used these keystrokes in order to get commands to work in Quattro Pro that you are not terribly familiar with the 1-2-3 menu commands, is that right?

A. Well, I'm not sure just how you quantify terribly familiar, but I can tell you I don't have the whole command hierarchy memorized.

Q. But you have written programs based on it in your career, have you not?

A. Yes, I have.

Q. You wrote a program called Farsight, isn't that right?

MR. REBACK: Objection, your Honor. Beyond the scope of the direct.

THE COURT: Well, I don't think so. The objection is overruled.

Q. You wrote Farsight, correct?

A. Yes, I did.

Q. And Farsight was a clone of Lotus 1-2-3 Release 1A, isn't that right?

MR. REBACK: Objection. Irrelevant, beyond [4-178] the scope of redirect, assumes facts not in evidence.

THE COURT: You know, testimony that bears on evaluation of any of the answers given on direct is appropriate cross-examination subject only to 403 problems and that kind of thing. It seems to me I should allow this question if not for



other reasons, as demonstrated a few moments ago with respect to different ways of getting to character or text mode quickly and easily. I think I should allow this question.

MR. REBACK: For the record, Farsight is not even a Borland product.

MR. GUTMAN: We'll stipulate to that, but this man wrote it.

THE COURT: The witness has testified in a number of ways during direct to a lack of familiarity with the 1-2-3 menu structure. This is testing the credibility of those answers, as I understand. That seems to me to be perfectly appropriate to cross-examination even given the very limited scope of the direct under the stipulation here.

BY MR. GUTMAN:

Q. Mr. Warfield, isn't it a fact that Farsight was a clone, or a workalike, or menu, macro and keystroke compatible, pick your term, with Lotus 1-2-3 Release 1A?

A. Farsight was macro compatible with Lotus 1-2-3 Version 1A.

[4-179] Q. And the menus were basically the same as 1-2-3 1A, right?

A. From a macro perspective, that's true, yes.

Q. From a user's perspective that was true too, wasn't it?

A. It wasn't true to me. I really couldn't say about any other users.

Q. What did you see on the screen when you ran Farsight?

A. I saw pull-down cascading menus and I saw dialogue boxes.

Q. What words did you see, sir, in what order? Was the first menu: worksheet, range, copy, et cetera?

A. Actually, as I recall, the first words were WKST. There were a number of other words scattered throughout the menus. There were a number of words that didn't ever appear in 1-2-3. There was a lot of different menus in the product.

Q. When did you write that program?

A. We started on that program back in 1983.

Q. And do you remember what the menus were, what the commands were on that menu?

A. No, but I remember in general how they were constructed.

Q. You remember the first? What was the second item?

A. I don't recall.

[4-180] MR. REBACK: Your Honor—

THE COURT: On 403 grounds I sustain the objection.

Q. Now, didn't you also create Surpass?

A. That's correct.

Q. And wasn't Surpass a workalike to Lotus 1-2-3 Release 2.0?

A. I don't know what you mean by the term "workalike."

Q. Was it macro compatible?

A. I'll say what I said before. Yes, the product was macro compatible.

Q. And didn't you write—didn't you write the long prompts for Quattro Pro without looking at Lotus 1-2-3? Isn't that what you've testified in this case, sir, based on your knowledge of our product?

MR. REBACK: Objection.

THE COURT: Now, wait a minute. Mr. Gutman, let me remind you of the limited purpose for which I'm allowing these questions, so I am not going to permit you to argue to me that I should consider these questions and answers on any other issue than the credibility of the answers of this witness on the direct, not for any other purpose in this case.

MR. GUTMAN: That is the only purpose, your Honor.

[4-181] THE COURT: Well, we're rapidly approaching the point where I think for that purpose it's cumulative, taking more time than it's worth and so on 403 grounds, the value of its probative weight for the legitimate purpose of impeaching the credibility of the answers given on direct is diminishing rapidly and is very likely to be overcome so that I should sustain the objection on 403 grounds.

MR. GUTMAN: I just have one more question on this line, your Honor.

Q. Mr. Warfield, isn't it the case, sir, that you wrote the long prompts of Lotus 1-2-3—I'm sorry—of Quattro Pro for the 1-2-3 compatible menus, and by your own testimony you did it without reference to Lotus 1-2-3?

MR. REBACK: Your Honor, I really am going to object to that. Let me explain why.

THE COURT: I sustain the objection.

MR. REBACK: Thank you, sir.

Q. Can we get back to Quattro Pro 2.0?

A. You'd like me to exit and go to Quattro Pro 2.0.

Q. Yes.

A. Okay. (Pause.) Here we are in 2.0.

Q. Now, what command—is there any command on this menu that would show you the read me file without going to DOS?

A. No, sir, there is not.

Q. Now, you showed that there was a reference to the [4-182] macro Key Reader in the read me file. Is there any reference to it in the printed material, sir?

A. No, there is not.

Q. Nothing in the manual?

A. Not that I'm aware of.

Q. Nothing on the cover of the box that the program comes in where features are listed?

A. I don't think so.

Q. Are you familiar with the panel?

A. Very much so, yes.

Q. On the back of the box where it lists new features, nothing on there about Key Reader, right?

A. I have no recollection of anything.

Q. How about in help? Is there any reference in the help?

A. I don't think so.

Q. Why don't you activate the Key Reader command and let's see—let me back up.

This program has context sensitive help, doesn't it?

A. By that you mean what?

Q. By that I mean that when you ask for help, the response is sensitive to where you are in the program at the time you ask.

A. Yes, that's correct.

[4-183] Q. Fine. Now, let's go to the macro Key Reader command and see what help says when you ask for it.

A. Okay. So I'll click on tools, I'll click on macro, I'll come down here to Key Reader. Do you want me to click on that, I presume, and then press F1 for help?

Q. Yes, sir.

A. Okay. Here we are.

Q. Any reference to the Key Reader in there?

A. Let me read it. Can't see any reference to the Key Reader.

Q. Okay. Now, the Key Reader wasn't a bug, was it?

A. No.

Q. You expressed some uncertainty as to whether there was any mention of Key Reader on the box.

A. Yes.

Q. Would you like to see the box? Let me refresh your recollection.

A. Okay.

Q. Can you point out to me any reference to the Key Reader in the materials on the box?

A. Let me just read through.

I can find no explicit reference to Key Reader on this box.

Q. Was there any reference to it on the box for the 3.0 release of Quattro Pro?

[4-184] A. I don't recall.

Q. Okay. Do you have Exhibit 520 in front of you, sir?

A. Yes, I do.

Q. Could you explain to me, please, what the parentheses mean on that exhibit?

A. The parentheses on this exhibit are simply the—



MR. REBACK: Excuse me, your Honor. This is marked "Confidential - Attorneys Eyes Only." Could we—the way we manipulate menus is a confidential aspect of the company's business. Could we take this at side bar or some other way if it's necessary?

THE COURT: Well, how do you propose we handle it?

MR. REBACK: I'm willing to let the witness testify about it. I just don't—

THE COURT: There's not a problem with anything that's on the screen?

MR. REBACK: No, sir.

THE COURT: All right. I'll see you at the side bar over here.

[4-185] AT SIDE BAR

THE COURT: It probably would be better if you stood facing from that direction, whoever is going to speak, so that you're speaking toward the court reporter.

MR. GUTMAN: Okay.

BY MR. GUTMAN:

Q. What do the parentheses mean?

A. They're just a formatting command, just as—you see this is an indented outline type of format. We found it easier rather than trying to count how many spaces there were from a formatting standpoint just look for a parenthesis to indicate the next level down.

Q. So the parentheses indicate different hierarchical levels?

A. Yeah. I mean, it just tells it to go to the next level.

Q. Well, now, a parenthesis facing to the right indicates what?

A. Open parenthesis means go one level deeper in the outline.

Q. And close parenthesis means what?

A. Come back out to the level you were last at.

Q. So then am I right in understanding that the letters NCRAMBI would refer to a level of the menu hierarchy?

A. That's correct.

[4-186] Q. So that would be a screen submenu, for example?

A. If you view it as a menu, yes.

Q. And are there commands from the 123.MU file that are not represented on this collection of sheets?

MR. REBACK: I'm sorry. Is that the question you intended to ask?

MR. GUTMAN: Yes.

MR. REBACK: Can I hear that back?

THE COURT: It may be read back.

(Question read back by the court reporter.)

MR. REBACK: This was represented as the Key Reader portion of the QUATTRO.MU file. That's all we've tendered it as, so I don't really understand the question.

MR. GUTMAN: But the witness has already testified at deposition and indeed we already have in the record that the Key Reader file was created by editing the 123.MU file.

MR. REBACK: That's not in the record yet. If you want to move it in tomorrow, perhaps—

THE COURT: Well, are you suggesting we should bring this witness back for—

MR. REBACK: Of course not. I'm sorry.

BY MR. GUTMAN:

Q. So what I want to know is whether this is complete or whether there are commands reflected in the 123.MU file that [4-187] are not reflected in these sheets.

MR. REBACK: The problem I'm having here is that the 123.MU file includes all the native menus. It's a huge file. So that's my confusion. You already know that.

THE COURT: Well, I don't know the answer to the question, so I'd like to have the answer to the question unless you can persuade me it's not appropriate for some reason.

Wait a minute. Did you wish to be heard further?

MR. REBACK: No, sir.

THE COURT: All right. You may answer the question.

THE WITNESS: Maybe I better just hear it back again.

(Question read back by the court reporter.)

A. Okay. There's a lot of information in 123.MU that's not in the Key Reader. What do you mean by commands?

Q. Okay. Let's back up. The pickletter W refers to the worksheet command in 1-2-3?

A. In 1-2-3 it does, you're correct.

Q. And the pickletter G, which is according to the parentheses indented one level in the menu hierarchy from worksheet would refer to global, would it not, which appears as the first command under worksheet in the 1-2-3 menu hierarchy?

[4-188] A. I see. So you're going to refer to any position within this hierarchy as a command.

Q. Please answer the question, Mr. Warfield. The question is: Doesn't G refer to global?

A. Yes.

Q. It represents global. And global is the first command under worksheet in the 1-2-3 menu hierarchy, isn't that right?

A. I think we have a terminology problem. It is difficult, the choice there. Is it a command? No, it doesn't do anything.

Q. It is the first word under worksheet?

A. Yes, absolutely.

Q. Now, what about format? Isn't that—isn't the parentheses and the F, pickletter F under the pickletter G, indicative of format, which is the first word you would find under global, which is in turn under worksheet in the 1-2-3 menu command hierarchy?

A. Yes.

Q. Now, where would one find, if anywhere, in this file letters that would correspond to the submenu that appears under format in the 1-2-3 menu hierarchy?

A. Okay. That's not part of the Key Reader portion. That's in the menu equivalent portion of the file.

Q. And why is that?

[4-189] THE COURT: And that means it's not in Exhibit 520?

MR. REBACK: That's correct, your Honor.

THE COURT: Well, all right. I understand the point.

MR. GUTMAN: That is—our whole point, your Honor, is that this is incomplete.

MR. REBACK: You would not let me ask the question why, that very same question before.

THE COURT: Well, I may let you ask it now. Go ahead.

MR. REBACK: May I ask a couple of other questions to set a predicate for it?

MR. GUTMAN: He didn't answer if I asked why. If his own—

MR. REBACK: Is this document complete?

THE WITNESS: Absolutely. This is the entire contents of the Key Reader portion of the file.

THE COURT: Well, now, you see, it's complete for what it is, but it does not—you have deliberately by definition excluded from it some very interesting and important and significant things. So I understand the answer it's complete, but when you start arguing to me that it's complete for the purposes of what I need to think about in order to make my rulings in this case, the answer is it [4-190] is not complete from that point of view.

MR. REBACK: Your Honor, that's the reason I wanted to ask him about this in direct.

THE COURT: Well, I'm giving you the privilege of asking right now if you want to.

MR. REBACK: Okay. Where are the format subcommands that the Key Reader would refer to?

THE WITNESS: They're within the menu equivalents.

MR. REBACK: Where are the menu equivalents?

THE WITNESS: They're in the menu equivalent portion of the MU file.



MR. REBACK: Are these format subcommands Lotus commands or are they Quattro Pro—

MR. GUTMAN: Objection.

THE COURT: Well, that's all right. I will let it come in. It doesn't answer all the questions that are relevant to my decision making, but I understand the answers that are being given.

MR. GUTMAN: As long as the point is clear that this is not the whole thing.

MR. REBACK: When the format command is invoked, will it call in the format subcommands from other portions of the file?

THE COURT: Wait a minute. I didn't hear the [4-191] first part of the question. When the format command is what?

MR. REBACK: Invoked. When invoked, will it call in the format subcommands from other portions of the file?

THE WITNESS: Sure, because at that point you've translated that F into a menu equivalent. This is the syntax for it right here that would appear in a macro defaults format. It then goes into the menu equivalent portion of the program and activates a default format command.

BY MR. GUTMAN:

Q. So format is now a command?

A. Default format is, yes.

Q. Where is the submenu for item L, which is the next item in order?

A. Same story. It's in the menu equivalent portion of the file under the defaults alignment command.

Q. Okay. Now, on page 572561, am I correct in understanding pickletter R there is range?

A. Yeah, I guess so.

MR. REBACK: Don't guess.

A. I couldn't tell.

Q. We can get the menu tree chart or you can look at the notation block.

[4-192] A. That's right.

Q. Block is what Quattro calls range in its native menus, isn't that right?

A. Sure.

Q. They're synonyms, right?

A. Sure.

Q. Okay. Now, where is the range format submenu?

A. It's in the block format menu equivalent section of the file.

Q. Now, is that submenu the same in 1-2-3 and in Quattro Pro?

A. I think so, yes.

Q. Now, is that the same as global format or is range format different?

A. The menu or the command?

Q. The submenu.

A. The submenu has the same choices on it.

Q. Okay. Now, where is the submenu for label under range? That's what the L refers to, isn't it?

A. Yeah, right below here. It's right here in the block align menu equivalent portion of the file.

Q. So it's not in the these pages, it's in the menu equivalent portion?

A. That's correct.

Q. Okay. Where would we find file erase?

[4-193] A. Same place. It's in the menu equivalent portion of the file.

Q. Is there any indication on here?

A. Yeah, there's a menu equivalent printed right to the right of—

Q. That's block erase. How about file erase?

A. Kind of hard to tell without the context. Do you know which page that's on?

Q. Well, file, I believe, is on 572564, pickletter F.

A. Okay. You want file erase, is that correct?

Q. Yes.

THE COURT: Over on the next page. It's letter E.

A. Yeah, file erase on 6-5.

Q. Now, where is the submenu?

A. It's in the file erase portion of the menu equivalents.

Q. And file S, where is submenu?

A. Same place, file—

Q. Back on the preceding page, pickletter F for file, pickletter R for retrieve—

A. Okay.

Q. —where are cancel and replace?

A. They're in the menu equivalent portion of file retrieve.

[4-194] MR. GUTMAN: Okay. I'm done with that.

(Plaintiff's counsel confer.)

Q. Now, is the 123.MU file in the same order as this document?

MR. REBACK: I'm sorry?

Q. Are the contents of the 1-2-3.MU file in the same order as this document? The organization and outline of commands, is it the same as in this document?

MR. REBACK: Well, I object on the grounds that that's not relevant to anything. That document is in evidence already. If you just refer to that and compare the two documents—

THE COURT: You want me to do that instead of having somebody who's done it answer it for me?

MR. REBACK: I don't know that he's done it.

THE COURT: Well—

MR. REBACK: They moved it into evidence, your Honor. It's in evidence.

MR. GUTMAN: We didn't move it into evidence.

THE COURT: I'll overrule the objection.

A. So what's the question?

THE COURT: You may answer the question. The question may be read back or you may restate it. It may be read back.

(Question read back by the court reporter.)

[4-195] A. So you're asking whether the outline of the commands in 123.MU is the same as the outline of commands found here?

Q. That's what I would like to know. We've already established that W means worksheet, G means global, F means format. L means label, et cetera, et cetera.

A. Right.

Q. What I want to know is whether they are listed here in this document, Exhibit 520, in the same order as they would be found in the 123.MU file.

MR. REBACK: Can we just bring the file over here? It's in evidence.

THE COURT: If he knows the answer, he may answer.

A. Yeah, as far as I know, they're listed in the same order.

MR. GUTMAN: Okay. I have nothing further on these documents, your Honor. If I may retreat to my desk, I may be done.

THE COURT: Unless you want to ask something that needs to be answered here at—

MR. REBACK: I need to make inquiry of the Court. This is the testimony I had tried to put on before, but I am willing to go into detail as to exactly how execution works so that your Honor doesn't come away feeling that we've taken something out of this file or concealed it.

[4-196] Just let me make a proffer first.

I proffer to show through the testimony—

THE COURT: Well, let me ask you how long is it going to take you to do it without going through the proffer first? How long will it take you?

MR. REBACK: I don't know, four or five questions maybe.

THE COURT: All right. Go ahead.



## REDIRECT EXAMINATION

BY MR. REBACK:

Q. Does the format command in the document in front of you—I'm sorry, Mr. Warfield. Strike that.

Does the invocation of F transfer execution to 1-2-3 commands?

MR. GUTMAN: Objection.

THE COURT: He may answer.

A. You mean if I just was to type in F or if I was to type that F?

Q. Where does that F send you?

A. This F—and since we're on the record here, it's the F under worksheet global F, WGF. That sends us into the defaults format menu equivalent command.

Q. Are those Lotus menus or are they Quattro menus?

MR. GUTMAN: Objection. Are which Lotus—

MR. REBACK: All I'm trying—

[4-197] THE COURT: Overruled. You may answer the question.

A. Okay. Defaults format is just a menu that's used within our native menu tree.

Q. Okay. If the Key Reader—when the Key Reader gets to a format—an F keystroke, what is displayed on the screen, a Lotus menu or a Quattro native menu?

A. Our native menu from defaults format.

MR. REBACK: That's my point, your Honor.

THE COURT: Okay. I understand.

MR. REBACK: I just want to note for the record Plaintiff's Exhibit Number 3 is the redacted version—number 13 is the redacted version of the file Mr. Gutman has been talking about that was moved into evidence during Phase I by the plaintiffs.

THE COURT: All right.

MR. GUTMAN: We did not move that into evidence in Phase I, your Honor.

THE COURT: Is it not yet moved into evidence?

MR. GUTMAN: No, and there was an objection based on the redaction.

THE COURT: Well, all right. The record is what I'll depend on and what you better depend on so if there's something not in evidence that you want to get in evidence then it's up to you to do it before we end the [4-198] trial.

MR. GUTMAN: If I may ask one question based on his questioning.

THE COURT: All right.

## RECROSS-EXAMINATION

BY MR. GUTMAN:

Q. The defaults format menu that Mr. Reback just asked you about is the same for Quattro Pro and 1-2-3, isn't that right?

A. They're—the same words appear.

Q. In the same order, correct?

A. From a macros perspective, yes.

Q. How about from the user's perspective looking at the screen? If you leave aside the fact that in 1-2-3 they appear horizontally and in Quattro Pro they appear vertically, isn't it the fact that it's the same words in the same order?

A. Leaving aside that fact, yes, that's true.

MR. REBACK: One last question.

## REDIRECT EXAMINATION

BY MR. REBACK:

Q. Why is that?

A. Well, it's a rather fortuitous thing, actually. It turns out that the formats are numbered within the file since everything

to a computer is a number, and the [4-199] numbering that's used happens to be the same order as they're numbered in these menus. So the easiest and most efficient way for us to be able to tell what to put in the file when—

THE COURT: Well, now, you say it happens, but that happens by your choice, doesn't it?

THE WITNESS: I'm sorry?

THE COURT: It happens by your choice. It wasn't just an accident.

THE WITNESS: It happens by our choice to be able to read that point in a file.

Q. Who gave those numbers, you or Lotus?

A. The numbers were determined by Lotus.

Q. Is this an issue of file compatibility or macro compatibility?

- A. It's an issue for file compatibility.

THE COURT: All right. We'll complete the side bar conference.

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

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CIVIL ACTION No. 90-11662-K

Courtroom 11  
Thursday, April 1, 1993  
Boston, Massachusetts

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LOTUS DEVELOPMENT CORPORATION

—vs.—

BORLAND INTERNATIONAL, INC.

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NON-JURY TRIAL PROCEEDINGS  
DAY 5

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Before:

THE HONORABLE ROBERT E. KEETON

*United States District Judge*

---

APPEARANCES:

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[5-2] (9:05 a.m.)

# PROCEEDINGS

## IN OPEN COURT

THE CLERK: Court is is now in session. You may be  
seated.

MR. GUTMAN: Good morning, your Honor.

THE COURT: Good morning.

MR. REBACK: Your Honor, I wish to apologize. Because of  
the rain our courier didn't show up and that's the reason we  
don't have—

THE COURT: All right.

MR. REBACK: There are a couple of housekeeping matters  
we could productively use the time for—

THE COURT: All right.

MR. REBACK: And once again let me say, sir, I apologize.

I'd like to begin by making the proffer that you had given  
me the opportunity to with respect to the 2.0, 2.01 issue.  
Yesterday I believe the Court said that the Court would give

me the opportunity to go back to the transcripts and make that  
proffer, and I'd like to do that now, sir.

THE COURT: All right.

MR. REBACK: First I'm going to explain why it [5-3] is  
I think that there is a macro compatibility problem between  
versions 2.0 and 2.01, then I'm going to call the Court's atten-  
tion to the prior rulings in this case, and then as a result of  
that I'm going to move to strike the portion of the presenta-  
tion yesterday which dealt with Version 2.01. If your Honor  
would just hear me out, I would appreciate that very much.

THE COURT: All right.

MR. REBACK: Okay. Now, in the *Paperback* case, I'm first  
going to cite the deposition of David P. Reid taken January  
30th, 1990. On page 7 of that transcript Mr. Reid identifies  
himself as vice-president and chief scientist, spreadsheets, for  
Lotus. On page 61 he is examined and he is asked the follow-  
ing questions.

"Question: In the context of Release 2, do you know if  
there were issues of compatibility with respect to earlier  
versions of 1-2-3?

"Answer: Yes, I know there were many.

"Question: Did those issues present difficulties with  
respect to developing Release 2.0?"

There are objections and colloquies, and essentially no  
answer to the question, but the Court is—we're certainly will-  
ing to let the Court examine the transcript.

In the *Paperback* trial I'm now going to cite the [5-4] tran-  
script from the eighth day of civil non-jury trial. I don't have  
a date on this, sir, but it's the eighth day, and I'm going to cite  
from page 156 of Volume 8. And the question is asked of  
Mr. Manzi, chairman of Lotus:

"Question: And the problem with Release 2.0 is it was not  
compatible with worksheet files that had been written with  
Lotus 1-2-3, Release 1A?

"Answer: No, I think it was a little bit more detailed than  
that. A lot of it had to do with undocumented features that  
were in 1A, actually 1.0 and 1A the people had used and we  
hadn't even represented for use or documented, and some of

our large accounts, for instance, needed those particular things supported. So there is this gradation of how compatible can you be or do you want to be while at the same time protecting the investment that's gone before and thinking prospectively about enhancing the product and the technology and so on, and so you encounter—

"Question: And so you encounter resistance"—"and so you encountered resistance from your customers because your customers perceived that Release 2.0 was not compatible with Release 1A?"

"Answer: Not sufficiently compatible for some of our customers, yes, sir."

Now, that ends the quotation at that point. Now, we have previously filed in our briefs quotations from Mr. [5-5] Manzi in this case in his deposition taken in this case, particularly on August 22nd and August 23rd.

For example, August 22nd, page 173, there is a reference to a document which he's being shown, Version 2.0, a discussion of compatibility. Those are as set forth in our briefs and I'm not going to repeat them, but I would like to quote from page 174—oh, I beg your pardon. I can't quote from this because this portion is confidential. But let me just say that there's a discussion of the difference between Release 2.0 and 2.01, and I will hand that up at the appropriate time to the clerk.

Now, your Honor, in this case—

THE COURT: Well, why don't you just hand it to me right now and let me look at it?

MR. REBACK: Yes, sir.

(Document handed to the Court.)

(Pause—Court is reading.)

MR. REBACK: Okay, sir. Now let me continue, if I might—oh, I'm sorry.

THE COURT: Well, wait just a moment. I want to finish reading what you've highlighted.

MR. REBACK: Yes, sir. I'm sorry.

THE COURT: All right.

MR. REBACK: Now, I now would call the Court's attention to Docket Number 45 in this case, which is [5-6] Borland's

Memorandum of Law in Support of Defendant Borland's Motion to Compel Production of Lotus Patent Applications and Development Documents. That was filed I believe May 24th of 1991, and the second of the questions statement—the second of the questions stated there deals with the issue of whether we are entitled to the development documents with respect to versions of Lotus released after those with which we are charged with infringement in the complaint. And the question set forth on page 4 of the memorandum: Are these documents likely to constitute or lead to admissible evidence where Borland believes that such documents will show that 1-2-3's command menu tree is used as a system or process for maintaining macro compatibility? And there is extensive discussion in the memorandum starting at page 27 about the various releases and the reason we want development documents, and all of it goes to macro compatibility.

That motion was argued, your Honor, before this Court on June 18, 1991, and the way the record stood at that point, I had asked for development documents for, I believe, three or four of the subsequent releases, 1-2-3 G, 1-2-3 for Windows, 1-2-3 for the Macintosh and—

THE COURT: Well, when were those in relation to 2.01?

MR. REBACK: Afterwards, sir. They were after [5-7] 2.01.

THE COURT: Well, how are you arguing that discovery in relation to those later releases would have anything to do with the comparison between 2.0 and 2.01?

MR. REBACK: I had also at that time scheduled a number of depositions going both to those versions and to 2.0 and 2.01.

THE COURT: Well, now, wait a minute. The fact that you asked for things going back as well as things going forward and I disallowed going forward doesn't seem to me to make your point that you've been—you had already had an opportunity for discovery with respect to the releases as to which infringement was charged, hadn't you?

MR. REBACK: No, sir—oh, with respect to the releases with which infringement is charged, yes, sir.



THE COURT: All right. What were the releases with respect to which infringement was charged?

MR. REBACK: 1.0, 1A and 2.0. That's what's in the complaint. Please hear the rest of my argument.

THE COURT: All right.

MR. REBACK: I do understand your Honor's question and I will address it.

THE COURT: All right.

MR. REBACK: I had depositions pending going to a number of these things, and the ruling your Honor gave [5-8] me on my motion to compel was that I was not entitled to any discovery with respect to versions released after those with which we were charged in the complaint with infringement, and at that point we cancelled the depositions.

And I'm now going to read from the transcript or I will further point to the transcript where the Court made that ruling, and I'll start on page 26. And at the top of that page at line 2 I say: "Borland's motion to compel goes to a number of issues, including macro compatibility." And then there's colloquy with the Court, and on page—at line 17 of that page: "No, I don't think I should allow discovery for that purpose, because it goes—what you're arguing to me, I take it, is, you want to make discovery not with respect to the time period when Lotus 1-2-3 was being developed, those versions on which the present action is based, but you want to make discovery of later developments for the purpose of confirming something or other about Borland's motivation back in the earlier time." And I say, "Yes, sir."

Then the Court goes on at page 27, line 2. The the Court discusses the need to cut down on discovery, and then at line 12 addresses the depositions I have scheduled. And the Court says, quote: "I don't mean to be trying to decide that you can't take depositions of particular people, because I don't know what the subject—what subject matter [5-9] might come up in it, but it is my view at this point that if you are using these depositions for the purpose of doing the same thing you wanted to try to do by the document demands for the later period of development, I would expect to rule the

same way. You may be back here before me on that subject. I don't want to try to make an abstract ruling on it, but that's very likely what's going to happen. At some point, you know, I begin to think about whether Rule 11 is being violated by demands that disregard totally the rules with respect to not only Rule 11, but also other discovery rules and so forth," your Honor.

Now, I renewed—we cancelled the depositions. We obviously did not get the development documents. We got some documents with respect to Version 2.01 from Mr. Gutman, but we were never able to trace down the difference in the incompatibility, and so I raised it again on the renewed motion for summary judgment in this case. And I said I'm still being charged with something—that Lotus' argument is based on something with which I'm not charged with infringement.

And there was oral argument on that subject Tuesday, May 19th, 1992 in this court, and the Court is having a colloquy with Mr. Gutman. And the Court says at line 22, quote:

"What puzzles me is why you don't just ask me to [5-10] allow you to amend your complaint and claim copying of 2.01 as well.

"Mr. Gutman: That's my fallback, your Honor." I'm onto the next page, line 1.

Quote: "If we had to, obviously we would ask for leave to amend to conform to the proof.

"The Court: Well, why don't you? Is there some other collateral consequence that you're worrying about?

"Mr. Gutman: Absolutely not, your Honor." And there's further colloquy.

Subsequently Lotus made amendment in this case to bring in the Key Reader. There was an earlier stipulation with regard to similarities between 2.0 and 2.01, but that stipulation only went to issues in the case at that time, not to the Key Reader issues. Key Reader issues are issues of macro compatibility. They could have amended at any time. Certainly they could have amended at the time—

THE COURT: At any time after they knew about Key Reader?

MR. REBACK: Yes, sir. They could have—

THE COURT: Not before?

MR. REBACK: Well—

THE COURT: Well, they wouldn't have any reason to before they knew about Key Reader, would they?

MR. REBACK: I believe if they're going to [5-11] demonstrate—attempt to demonstrate that I am infringing Version 2.01, they should have charged me with that from the beginning.

THE COURT: Well—

MR. REBACK: But my only point here, your Honor, we're on the Key Reader Phase, and that's all I'm trying to argue here.

THE COURT: Now, let me understand. Are you now contending that infringement of 2.01 is an issue in this case?

MR. REBACK: I'm contending it is not an issue in this case.

THE COURT: All right. Then the fact that they could have amended to make it an issue is irrelevant. It's not an issue unless I'm told otherwise in a few minutes. 2.01 infringement is not an issue.

MR. REBACK: Very well, sir. That is my point.

THE COURT: Key Reader infringement is an issue.

MR. REBACK: Yesterday during the examination of Mr. Warfield, I attempted to ask him whether the Key Reader is compatible with Version 2.01. That answer was not permitted to be given. I will proffer for the record the answer is: It is—it is to be compatible with Version [5-12] 2.01. We don't know whether it's compatible with Version 2.0. It was never tested in that respect. It was never intended to be compatible—

THE COURT: Well, now bear in mind that the reason I made the ruling I did was your stipulation about the scope of his testimony, and I ruled the way I did because I told you you're fighting the stipulation.

MR. REBACK: Okay.

THE COURT: I wouldn't have ruled that way if I didn't have the stipulation before me.

MR. REBACK: Your Honor, I would like to discuss at some point—I understand your Honor's ruling to that effect. I would like to discuss at some point the circumstances under which that stipulation was signed, but I don't want to burden this particular argument with it.

My point is exactly the one made by your Honor. I'm not charged with infringement of Version 2.01. That was the only one demonstrated yesterday. I don't know what the differences are between Version 2.0 and 2.01, and the Court did not allow me discovery into that version because of the position Lotus took at that point.

THE COURT: Well, but I said when I made that ruling you can come back before me if you show me some reason it's material. At the time I made that ruling there was no claim of infringement before me either with respect [5-13] to 2.01 or Key Reader. Later Key Reader became an issue. It was up to you to come back and ask me for a change in my ruling on discovery if that change in the issues in this case justified it. You didn't, did you?

MR. REBACK: No, sir. I think it's their burden to demonstrate that what I'm infringing—

THE COURT: Listen, it is never their burden to ask me to come back and rule in your favor on something that I said I'm not ruling on now. If it ever becomes material, you may come back to me. You didn't.

MR. REBACK: Well, that is correct, your Honor.

THE COURT: That's no burden of theirs to come back and say, "Your Honor, we want you to change your ruling in our favor and now rule in their favor because of the change of circumstances." Of course that's not their burden.

MR. REBACK: Your Honor, at the time I made the original motion, your Honor raised the issue of Rule 11 sanctions, and quite frankly, sir, I was not going to push the issue in light of your Honor's view of it at that time.

THE COURT: That didn't stop you from coming to me to say—and you could have done it the way you've done in many other instances—"I don't want to be in violation of the Court's ruling, but now there is a change [5-14] of circumstance." Of course you're free to do that.



MR. REBACK: All right. Your Honor, I understand your Honor's point on that, and I will not argue with the Court. I will continue to press the point that as of right now, I am only charged with violation—with infringement of Version 2.0 and not with Version 2.01, and the only thing that was demonstrated yesterday was Version 2.01. That's my point, sir.

THE COURT: All right.

MR. GUTMAN: May I respond, your Honor? And since we traveled light today not expecting this issue, I'd like to borrow from my brother the stipulation he signed.

(Document handed to Mr. Gutman.)

MR. REBACK: And the cover letter as well. There you go.

MR. GUTMAN: Thank you very much.

I think Rule 11 is an appropriate subject this morning, and it pains me to raise this, but my brother, Mr. Reback, has flatly, flatly misrepresented the record in this case. And as I said, I didn't expect to be arguing this this morning, so I don't have all the quotes, but I'd be happy to bring them back after lunch if it would help.

The issue on the discovery motion to which he refers was not versions of 1-2-3 that came out after those named in the complaint. It was versions of 1-2-3 that came [5-15] out after Quattro was released. That's where we drew the line. We did not draw the line based on the three identified in the complaint.

2.01 came out before Quattro was released. We did not block any discovery with respect to 2.01. We produced thousands of pages to them, including pages that talked about this supposed compatibility issue. We gave them free rein in depositions on that issue.

Indeed, Mr. Reback's former colleagues took the deposition of Jill Lashway on August 7th, 1991. Lisa Olson and Mitchell Zimmerman of his old firm, Fenwich & West, took that deposition. Page 82:

"I believe you stated earlier that you were also the program manager for Version 2.01 of Lotus 1-2-3?"

"Yes.

"And can you tell me the reasons why Lotus decided to release Version 2.01?"

"Answer: 2.01 was a maintenance release of 1-2-3." And it goes on.

They questioned her on precisely this subject, and she was the program manager. We never refused to produce anyone because they were relevant to 2.01 and not to some other release. Never happened. The depositions that were at issue—and I'm doing this from memory, but I think I'm pretty close—at the time of the motion Mr. Reback's [5-16] referring to were people involved in 1-2-3 for Windows, 1-2-3 G, perhaps 1-2-3 Release 3, all of which came out afterwards.

THE COURT: All right. Now, let me interrupt.

Mr. Reback, I'm being told by Mr. Gutman that the line that was being drawn and the issue that was before me in that discovery dispute was whether you should be allowed discovery for releases after Quattro came out, not for releases after the releases by Lotus as to which infringement had been explicitly charged in the complaint. Now, is that correct?

MR. REBACK: That was the subject matter of my motion, your Honor.

THE COURT: All right. Then it seems to me that by itself defeats the argument that you're making to me now. You had an opportunity to discover with respect to 2.1.

MR. REBACK: Well, your Honor, my point was that the ruling that your Honor made was not limited to—to that, but—

THE COURT: The ruling I made was limited to the issue before me presented by your motion, and things you read to me just a few moments ago indicated that if you had a different motion to present because of change of circumstances, I was not ruling on it and you could come [5-17] back to me.

MR. REBACK: Very well, your Honor. I understand your Honor's point.

THE COURT: You know, you really shouldn't have withheld that information from me in making your argument. You were telling me that I had forbidden discovery on 2.1.

MR. REBACK: Your Honor, in absolute good faith, it was my understanding when I came out of that argument that

I could not press that issue. But the only thing I'm pressing today, sir, is the issue that you stated before.

I understand your Honor's statement on discovery. The only issue I'm pressing is: Am I charged with infringement on the Key Reader Phase of Version 2.0 or 2.01?

I accept your Honor's ruling on discovery. Your Honor has ruled I could have taken that discovery—

THE COURT: Now, I understand the record to be as follows: That you are charged with infringement of releases up through 2.0—

MR. REBACK: Yes, sir.

THE COURT: —and with infringement of Key Reader.

MR. REBACK: Yes, sir.

THE COURT: Now, I do not understand the [5-18] record in this case to mean that Lotus is claiming infringement of 2.1 as distinguished from the earlier releases. Am I correct?

MR. GUTMAN: Your Honor, we are relying on the stipulation which says that for these purposes they are the same.

THE COURT: That 2.0 and 2.1 are the same?

MR. GUTMAN: Exactly.

THE COURT: Well, read me the stipulation.

MR. REBACK: Why don't you just hand it up.

MR. GUTMAN: Well—

MR. REBACK: Just hand it up. Why don't you—it's two paragraphs.

THE COURT: Well, all right.

MR. GUTMAN: Your Honor—

THE COURT: Read it and then hand it up. Read what you want to read out of it and then hand it up so I can see the whole thing.

MR. GUTMAN: Okay. "The menu commands in Lotus 1-2-3 Release 2.01 are the same as those in Lotus 1-2-3 Release 2.0, and are displayed to the user in an identical manner during operation of the program, and there is no difference in the user interfaces," with the S in parentheses, "of the two versions that would have any affect on the issues in this case."

[5-19] Now, the reason for that stipulation was a matter of convenience for both sides, your Honor, because both sides at

that point had come to understand that Release 2.0, because it was only in the market for a very short period of time, was no longer readily available to either of us. There was copy protection on it, so it was difficult to load on hard disks, it was difficult to use with our experts, it was difficult to use in depositions, and it was difficult to use for demonstrations. And each of us in reliance on this stipulation has consistently used Release 2.01 for purposes of our demonstrations.

Now they didn't show 1-2-3 yesterday in their demonstration, but if your Honor recalls the videotape demonstrations that they submitted on the summary judgment motion, they used 2.01 just as we did. Both sides have used it as being interchangeable with 2.0 because for all purposes relevant here—and macro compatibility, I should add, is not a new issue with the Key Reader. It was an issue before too. That was their reason they said that they were doing what they were doing before Key Reader. It's not a new issue to this case. It's been an issue in this case all along. And for all relevant purposes in this case, any effect on the issues in this case, we had stipulated that 2.0 and 2.01 are the same.

Now, they've infringed both, because what they [5-20] did is that—you know, it's like the second printing or second edition of a book. If the text is not different, then the infringement is the same. And if it would simplify things, your Honor, I would be quite happy to move under Rule 15(b) at this point to amend the pleadings to conform to the proof, because both of us have done it.

THE COURT: Well, I don't think I could allow you to do that for the reason that I really pressed you as to why you weren't doing that earlier and you weren't doing it, and so I don't think I ought to give you some advantage that might grow out of being allowed to make a trial amendment at this point for that purpose.

So I'll consider the issue on the other basis. I just—

MR. GUTMAN: Well, your Honor, what—

THE COURT: Trial amendments are appropriate where an issue has been tried by consent. They are not appropriate where one side holds back from making the amendment ahead



of time so everything can be developed in relation to discovery and preparations for trial, and then wants to ask me in the midst of the trial to allow the trial amendment over opposition, and that's what you're doing. I will not do it.

MR. GUTMAN: Your Honor, the—I'm not looking for an unfair advantage. What I'm looking to avoid [5-21] is being unfairly sandbagged by my brother. When I put on a demonstration in reliance on a stipulation—

THE COURT: Well, I understand that argument—

MR. GUTMAN: —and—

THE COURT: —and so I consider it, but I consider it on the record of pleadings as they are, especially in light of the fact that I in effect pressed you as to why we don't simplify the procedural posture by getting the amendment earlier.

MR. GUTMAN: I don't have the complete transcript, your Honor, so I don't recall where that colloquy ended, but I would like to reserve the right to look at the rest of it—

THE COURT: You may.

Mr. Gutman: —and see, because I think there may well be an explanation of why we didn't do it at that time in that transcript. Among other things, we didn't want to run into the argument that it was too late in the game, and we were relying then as we are now on the stipulation. We did not believe it was necessary because we had a stipulation that for all relevant purposes they were the same.

And I believe we could also—and I don't want to quarrel with your Honor's ruling, but there is evidence [5-22] in the record that both sides throughout, and not just in their demonstrations, have treated 2.01 and 2.0 as interchangeable. If your Honor would look again at all the expert declarations that were put in by both sides and the witness testimony, both sides have in fact tried it as if it was the same.

Now, I don't need that and it doesn't matter to me if he doesn't get out of this stipulation and if it sticks, but the motion before your Honor by Mr. Reback this morning is to strike my entire demonstration which he conveniently raises today when the machines aren't here, Mr. Roshfeld isn't here. He declined to cross-examine Mr. Roshfeld yesterday. If he

cross-examined Mr. Roshfeld, he could have found out that the, quote, incompatibilities between 2.0 and 2.01 had absolutely nothing whatsoever to do with any of what was demonstrated yesterday, had nothing whatsoever to do with the menu commands. Indeed, if your Honor—perhaps I should make a proffer for the record here.

The incompatibility—apart from cleaning up bugs, which was the principal purpose of the maintenance release in 2.01, the incompatibility at issue there did not involve the menus, did not involve the menu commands, did not involve anything that Mr. Roshfeld showed yesterday. What it involved was the question of whether in doing an [5-23] average under-the-average function, which nobody has shown in this case, Lotus 1-2-3 treated a cell that was a label rather than a number as being a non-event or being a zero.

There was a bug in Release 1A and in Release 1 of Lotus 1-2-3 that caused those labels to be treated as zeros. So that if you created an average of a range of numbers and it included within the range a cell that was—a label rather than a number, your average would be off, because the total would be divided by one more number than it should have been.

Now, in preparing Release 2, Lotus discovered this and corrected it. Unbeknownst to Lotus at that time, a very big customer, one of the country's largest accounting firms, had found it first and developed lots of applications working around that bug. So when Lotus corrected the bug, it made all of that accounting firm's applications no longer valid. That was the macro compatibility inconsistency that was fixed in 2.01, and Mr. Roshfeld—I would represent to the Court that Mr. Roshfeld could so testify that it had nothing to do with his demonstration. He would have—if Mr. Reback had crossed him on this point yesterday, and I would—and if this is an issue where there's any chance that the Court is going to grant that motion to strike my demonstration, your Honor, then I would request leave to recall Mr. Roshfeld so that we can put this on the record [5-24] and resolve it once and for all.

But I think it's totally unfair when we've relied on the stipulation, as I said yesterday we were doing, and used the same product that all of us have used for demonstrations for purposes in this case for him to come in the next day when the machines are gone, the witness is gone, and say, "Doesn't count. Wrong problem. Strike the demo." Thank you.

THE COURT: All right. Let me see the stipulation.

(Document handed to the Court.)

(Pause - Court is reading.)

THE COURT: All right. You wanted to speak further, Mr. Reback?

MR. REBACK: I don't think so. I'm prepared to move on.

I will say as the record reflects from yesterday, we asked that Version 2.0 could be put on for the computer demo, and technically they were not able to do so yesterday.

THE COURT: Yes, but that has been explained to me.

MR. REBACK: Yes, sir.

THE COURT: All right. Now, your motion is denied.

First, I think you are fighting the stipulation. [5-25] It is true that the stipulation was not focused specifically on the issues in Key Reader because they were not in the case at that point, but the issues that are material to this demonstration were in the case at that point. And let me explain more fully my reason for coming to that conclusion and in the process also I am stating an additional ground quite independent of that for my denying your motion.

Let me start with the point that there's an analogy in my mind to the constantly recurring argument that a party is entitled because of ambiguity in a written agreement, a stipulation or anything else, to offer evidence and have that ambiguity resolved in favor of the party who is advancing the proposal.

The law is crystal clear, although all too often counsel forget about it in presenting arguments on the question, that you have to show more than ambiguity. You have to show ambiguity in a way that might be resolved in your favor on the basis of a proffer of expected evidence that might reasonably be anticipated.

Now, if there were differences between Release 2.0 and 2.01 that had a bearing on that demonstration that I was seeing yesterday, I could well understand if the demonstration crashed that 2.0 might have been different and it might not have crashed with 2.0. But there was no crashing in the demonstration. There were two or three [5-26] points at which the error messages came, but there were explanations in the course of the demonstration itself and the inferences I might draw from seeing that demonstration, plus the explanatory evidence that was given by both witnesses during the process of the demonstrations that I saw. You have not proffered to me any sensible reason, a reason that would appeal to my common sense as a fact finder without any expert advice from anybody, that somehow or other the demonstration would work with 2.01 but wouldn't work with 2.0, as distinguished from the possibility which does make sense, that the demonstration would have crashed with 2.01 when it wouldn't crash with 2.0.

Now, also, the common sense high probability that that is an accurate assessment of the situation is reinforced by the terms of the stipulation. And I'm quoting the stipulation: "The menu commands in Lotus 1-2-3 Release 2.01 are the same as those in Lotus 1-2-3 Release 2.0 and are displayed to the user in an identical manner during operation of the program."

Now, I take it as I read the cover letter and the attachment that the earlier proposed stipulation had stopped there and then the added paragraph—added statement after the semicolon was added. Is that correct?

MR. REBACK: I believe that is correct, sir.

THE COURT: All right. So let's—suppose we [5-27] stop there.

Now, that tells me that not only the menu commands are the same in the two, but because they are displayed to the user in an identical manner during operation, the structure, the tree, the order, the sequence, are all the same, the arrangement in steps, so that a particular letter or symbol would mean something at one step that would be different from what its mean-



ing would be at a different step, a point that I was also shown again in the demonstration where C has one meaning at one step and it has a different meaning at another step. Because the stipulation is that the menu commands are displayed to the user in an identical manner during operation, that tells me the stipulation is that they were displayed in the same step order, the same structure, the same sequence in 2.0 and 2.1. So I have not heard from you any reasonable suggestion of any possibility that the demonstration I saw yesterday would have come out differently if it had 2.0 on there instead of 2.1.

Now, in addition to all of that, isn't it correct that you were prepared at this trial to show me a demonstration using 2.01? That's what you had proffered and expected to do. You changed the demonstration yesterday and instead of putting your—your advance preparation on and used the one that they had put there, but you were not [5-28] proposing to me to be able in this trial to show me a demonstration of 2.0 and Key Reader, were you?

MR. REBACK: I was only going to demonstrate the Borland Quattro products, your Honor. That's all I ever intended to present.

THE COURT: All right. Then what I'm saying to you is, you had not proposed to me that you were going to demonstrate a 2.0 product—comparison. Is it also true that in Phase I of this trial you showed me some demonstration that used 2.01? Mr. Gutman has told me so. Is that correct?

MR. REBACK: The only time that I can recall that is in the summary judgment phase we submitted a videotape, and in that videotape we took a portion of Lotus' videotape in which they demo'd Version 2.01. So in that sense—I'm now trying to respond to your Honor—I do recall that.

THE COURT: Yes. All right.

MR. REBACK: But that was not proffered by the—

THE COURT: All right. Now, for all the reasons I've indicated and the one more point that I made to you yesterday, there is another analogy that is instructive to me here.

When I have a photograph offered in evidence that [5-29] was taken at a time after the moment that was critical and that

we're trying to reconstruct in the courtroom with the aid of oral testimony and visual exhibits as well, I'm not supposed to exclude a photograph because it was taken at a different season of the year if it is explained to me in a way that I as fact finder or the jury as fact finder can assess its value for the probative purpose by taking account of the evidence that is offered to explain the difference between the exhibit and the conditions at the time that is relevant, and why they do not invalidate the other probative information that appears on the exhibit.

Now, I said to you yesterday and gave you an opportunity to offer any evidence you want that explains why the differences are material instead of just saying, "Oh, there are differences, therefore it's improper."

It's the same point that I was making about ambiguity. Simply showing ambiguity doesn't open up the field for you to offer all kinds of evidence if the ambiguity is between two possibilities, neither of which helps you. It's irrelevant, immaterial.

Your motion—your proffer is before me. I have heard it. I have considered it. It does not persuade me I should change my ruling—the ruling allowing the demonstration subject to particular rulings I made about portions of it yesterday and the testimony—or rather, it [5-30] was not so much the demonstration, I guess, as some of the testimony that was offered by the witnesses that I excluded.

Those rulings stand.

MR. REBACK: I understand your Honor's ruling.

I have a couple of other housekeeping matters. I think you'll—

MR. GUTMAN: Actually, before we do, your Honor, if I may, and I am not in doing this attempting to reargue your Honor's ruling on the motion for leave to amend, but I now have before me the transcript in question. And since I value and have done my best to safeguard my credibility in this courtroom during the years I've been here, I would like for the record if the Court will bear with me just to read what immediately follows where Mr. Reback left off.

THE COURT: You may.

MR. GUTMAN: He quoted me in response to your Honor's question about the "Why don't you? Is there some other collateral consequence that you're worrying about?"

"Mr. Gutman: Absolutely not, your Honor." I believe that's where Mr. Reback stopped reading. My answer continues:

"It's simply Borland screaming about being surprised by this at the last minute; frankly, their version of the story in which they say, 'Oh, no, we were copying [5-31] 2.01, not the identical 2.0.'

"The Court: Is it correct that if your claim included copying from 2.01, that would not have affected the scope of discovery at all in this case, the scope of the issues?"

"Mr. Gutman: Not at all, your Honor. We have in this case and in *Paperback* at every instance given full discovery with respect to 2.01, because for our purposes 2.01 and 2.0 were the same. We never drew a distinction, never. And although they made such a claim in their brief, there is no support to that in the record, zero, and they have cited none. We produced the full discovery record concerning the development of 2.01 in the *Paperback* case, in the *Paperback* case, your Honor, and all of that discovery was provided to them here. They have never been blocked from asking questions about 2.01 here. It's never been an issue. 2.01 was a maintenance release that fixed some bugs and some undocumented features, none of which had anything whatsoever to do with the user interface as they have stipulated. The stipulation wasn't some gimmick, your Honor. It was the appropriate stipulation because it was true.

"The Court: I understand that and I've perhaps diverted you from your principal argument. I don't care to have you press it any further on this point"—"I don't [5-32] care to have you press it any further on this point."

And then we went back to what I believe was the summary judgment argument. Thank you, your Honor.

THE COURT: Mr. Reback?

MR. REBACK: Can I go on to the next one?

THE COURT: You may.

MR. REBACK: All right. Thank you, your Honor.

May I just have my copy of the stipulation back that I've handed up?

THE COURT: Yes, you may. Oh, no. Here it is. Hand that back to—

MR. REBACK: Thank you, your Honor. All right.

THE COURT: Your other document I'm handing you back is the one that had some protected materials in it.

MR. REBACK: Yes, sir. You've handed to me now actually both of these items that I handed up.

The second item has to do with the software library that is being prepared for the Court. The Court does not yet have that software library, because as I understand it, there were some difficulties in loading the software.

Now, your Honor will recall that the last time in the last phase of trial, Lotus moved into evidence a number

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[5-136] Mr. Konrad: 201, your Honor, beginning at line 23. This is examination of Mr. Warfield by Mr. Detkin which I believe was beyond the scope of what was asked of him by me; but in any event, it is a series of questions asking Mr. Warfield to opine as to whether or not—well, as to the nature of the 1-2-3.MU file. Whether it's part of the program, whether it's part of the code, are they instructions to the computer and so forth, all of which seem intended to try to present an opinion of Mr. Warfield either with respect to the definitions in the Copyright Act or as an expert on computer science or some other purpose for which he was not qualified in this deposition.

THE COURT: Well, from which I don't receive expert testimony, also. Now, as I read this, he is using program in the same sense as code. I don't know whether he means object code or what, but code.

MR. DETKIN: I believe that is discussed later on in the deposition transcript, that Mr. Konrad in fact counter-designated. I'd like to make—



THE COURT: Well, how is it relevant to the present trial, any issue in the present trial?

MR. DETKIN: It's relevant to the issue of we're not—

THE COURT: Let me see. Am I not correct? I'm not trying anything about what's in code? You haven't [5-137] given me any evidence about what's in code, isn't that correct?

MR. DETKIN: Your Honor, we have given you what's within the files of the program.

THE COURT: I use the word carefully. You have not offered me any evidence about what's in quotes "code", unquote, in this trial, have you?

MR. DETKIN: I believe—

THE COURT: In whatever sense you may be using code, have you?

MR. DETKIN: That's correct, your Honor.

THE COURT: All right. Then why should I be receiving these answers about what's in code?

MR. DETKIN: Well, I believe it goes to a point discussed this morning that the appellate court may not have as clear an understanding of the difference between the code and files as your Honor does.

THE COURT: You know, that objection leaves me completely baffled. Of course the appellate court is going to have an understanding of what you're arguing to them if you make the argument clear enough to them they can understand it; and if you don't, that's your problem.

So how would my receiving—it would seem to me my receiving this as a part of the record here would confuse the appellate court if they didn't have some kind of an

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

CIVIL ACTION No. 90-11662-K

Courtroom 11  
Friday, April 2, 1993  
Boston, Massachusetts

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LOTUS DEVELOPMENT CORPORATION

—vs.—

BORLAND INTERNATIONAL, INC.

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NON-JURY TRIAL PROCEEDINGS  
DAY 6

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Before:

THE HONORABLE ROBERT E. KEETON

*United States District Judge*

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APPEARANCES:

O'SULLIVAN, GRAEV & KARABELL, by Henry B. Gutman, Esquire, Kerry L. Konrad, Esquire, Joshua H. Epstein, Esquire, and Paul M. O'Connor III, Esquire, 30 Rockefeller Plaza, New York, New York 10112, on behalf of the plaintiff.

WILSON, SONSINI, GOODRICH & ROSATI, by Gary L. Reback, Esquire, Peter N. Detkin, Esquire, Andrew G. Konstantaras, Esquire, and Isabella E. Fu, Esquire, Two Palo Alto Square, Palo Alto, California 94306

—and—

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[6-94] which is the utilitarian aspect of what's going on here. I mean, let's face it. Neither Borland in the products up to the July 31st opinion, or Computer Associates, or SuperCalc 5, or Microsoft, and Excel 3.0 and 4.0 uses these words that Lotus says it has a copyright in. They don't use those words because they're the best words or their order is the greatest order or they're just the right words. They use the words as a system or method of operation. So I would respectfully maintain, your Honor, that what Lotus' claim with respect to the Key Reader demonstrates is it that this case is not about words. Why else would they be complaining about a blank box on a screen with no words in it?

Now, let me make one other point, and I would respectfully go around counsel table and approach the bench a bit for this particular point.

I'm now going to hold up in my right hand for the purposes of the record a screen shot of Excel 2.0 already in evidence. This is the file menu from Lotus 1-2-3 with the extract commands in it, the retrieve menu on the screen, a direct copy of the Lotus menu. This is the version in my right hand that Jim Manzi said he had no problems with. This is the version that the Court blessed in its *Paperback* decision and in *Borland I*.

In my right hand I have a Quattro Pro for Windows screen shot with a box that is blank.

[6-95] THE COURT: For the record, you meant left hand in that—

MR. REBACK: I beg your pardon, your Honor. In my left hand I have a screen shot of Quattro Pro for Windows with a box that is blank. Your Honor, how can it be that under copyright law what is in my right hand, the Lotus commands as displayed in Excel is absolutely okay, but what is in my left hand, a blank box with no words, is illegal? How can that be?

Your Honor, I cite *Baker v. Selden*, *Altai*, *Sega*, the Copyright Office amicus brief, the law professors' amicus brief, I cite a hundred years of copyright law that cannot be the right result and respectfully argue to the Court that the Court consider that argument in its deliberations.

May I hand this up to the Court if the Court needs to see it further?

THE COURT: Well, I have seen it. Thank you.

MR. REBACK: Thank you.

I would also point out for the record, your Honor, Excel 2.0—actually it's—yes, Excel 2.0 that I held up to the Court I believe in my right hand and I demonstrated that—and the product is in evidence so your Honor does not have to take my word for it. Your Honor can look at it. I just want to point out that as with respect [6-96] to what Mr. Roshfeld demonstrated yesterday in Quattro Pro, he demonstrated that in Quattro Pro's blank box you can cursor down from one command to the next. The commands in Lotus—in the Lotus file in Excel can be accessed by a keystroke, the same keystroke that's the first letter of the Lotus command, and your Honor can demonstrate that to the Court's satisfaction in chambers with the product that's loaded on the system.

One moment, if I may, your Honor.

(Defense counsel confer.)

MR. REBACK: I appreciate the Court's consideration, your Honor. Thank you very much for hearing me today.

#### PLAINTIFF'S FURTHER CLOSING ARGUMENT

MR. GUTMAN: Your Honor, if I may, I just have a few points I'd like to make.

Starting where Mr. Reback ended, this version of Excel, Excel 2.0, or I believe it was actually 2.1, that was before the



Court in the *Paperback* case and that is in evidence here, I'm not sure I understood my brother correctly, but if what he was saying was that you could use 1-2-3's keystrokes and cause the program to respond the way Mr. Roshfeld did with Quattro Pro for Windows using the Key Reader mode the other day, that's false, and I would invite the Court to try it.

[6-97] The piece of Excel, that version of Excel that Mr. Reback is showing your Honor—it was in his left hand and now it's in mine—is a help facility that allowed Excel users who were former 1-2-3 users and knew the 1-2-3 commands to easily discover what the Excel equivalents would be, because the Excel menus were themselves quite different. So what happened in this help facility—and I know we've been over this back in *Paperback*, but it's been some time—was, you could specify 1-2-3 keystrokes that would cause a certain thing to happen in 123 and what would come up in this box would be the Excel equivalent. So that if it took file exit to do the same thing as quit in 1-2-3, you could gain that information. It was simply a help facility. It was not in fact an alternate user interface and it did not in fact accept the keystrokes and do anything beyond telling you what the Excel counterpart would do.

Now, back—pardon me, your Honor. I'm losing my voice. Back to the beginning. The section of Philippe Kahn's transcript that Mr. Reback was relying on saying that this demonstrates that he customarily relies on Mr. Kohn for all these decisions does not fill the gap. That's exactly—I'm not going to read it, but it's exactly the section that Mr. Konrad objected to yesterday anticipating that they would argue this, anticipating that they would try to use it to bridge the evidentiary gap that has not and

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[6-104] that, we certainly would have known it was there earlier than we did and would have dealt with it, but they never did. They were hoping they could do it by indirection.

Final point, your Honor. We are not talking about screen displays. We have never been talking about screen displays. We are talking about elements—Mr. Reback keeps trying to

talk about screen displays, but we never have. That's not what this case is about. That's not even what *Paperback* was about. Your Honor said so in the *Paperback* decision. What this case is about is copyrightable expression in the form of menu commands, a menu command hierarchy and structure, keystroke sequences and a macro language. They copied it before, they are copying it still. The only difference—two differences. One, they have abbreviated the commands down to initials, and frankly, I would say they are infringing whatever symbolic token, using an old familiar term, they choose. And two, they have hidden it from use. And I would respectfully submit that when you take our expression, neither of those is a material difference or anything that should matter as a matter of law.

Before I sit, the last thing I wanted to do, your Honor, I don't know whether your Honor has received the March issue of the Harvard Law Review yet. I'm sure your Honor will.

[6-105] THE COURT: Yes, it came through my front door slot a few days ago.

MR. GUTMAN: I had mine sent up just in case. Your Honor, there is an article in there by Professor Miller on the subjects that we have been litigating over here. We would respectfully submit that there is much that is useful and wise in that article and we would commend it to your Honor. Thank you.

#### DEFENDANT'S FURTHER CLOSING ARGUMENT

MR. REBACK: Let me begin with the last point first, which—I have not seen the final of Professor Miller's article, but I would note—first of all, of course the Court can read and consider whatever law review is appropriate. Professor Miller is in fact a consultant to Lotus and I would ask the Court to consider that when reading the article.

A couple of very quick points. I think Mr. Gutman confused two arguments that I made with respect to Mr. Roshfeld's demonstration and I just want this point to be very clear.

The menus that come up in the Key Reader are Quattro Pro native menus and your Honor can demonstrate that to the

Court's satisfaction in chambers with the product, and that was the point I was making about the menus.

Finally the last point with respect to this [6-106] Microsoft Excel display of Lotus menus. You can in this version that Mr. Manzi said they had no problem with, you can type in the keystroke that signifies the command and the cursor will move down to that command and you can then open up the subcommand. If I heard Mr. Gutman correctly, that's okay, as I understand it. What's not okay about the Borland product is that it executes the command, and I would respectfully suggest that is the distinction we're trying to make in this case. That is the very distinction that is at issue here. I would also point out that in the versions currently on the market, including those explained in Dr. Liddle's declaration, Versions 3.0 and 4.0, the commands will actually execute. But for the purpose of this argument here today, if I've made no other point, I want to make the point that it is the execution that Lotus cares about and not the words. Thank you, sir.

THE COURT: All right. Now, I believe we had an understanding, when was it, yesterday, about anything else that is to be done which concerns getting the record before me.

MR. REBACK: Yes, sir. We're going to take this away and as rapidly as we can get it back to the Court, in more than two weeks. Thank you, sir.

THE COURT: Thank you. We'll be in recess.

MR. GUTMAN: Thank you, your Honor.

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

CIVIL ACTION No. 90-11662-K

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LOTUS DEVELOPMENT CORPORATION,  
*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.  
*Defendant.*

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DECLARATION OF TIMOTHY A. BOYD

I, TIMOTHY A. BOYD, hereby declare under penalty of perjury as follows:

Experience and Qualifications

1. I am a Vice President of Burke Marketing Research, a nation-wide organization which provides marketing research services to hundreds of corporations in the United States. I work in the San Francisco Client Service Office of Burke Marketing Research.

2. Burke Marketing Research has been engaged in market research for 60 years, and is one of the largest and most respected market research organizations in the country. Each year Burke conducts more than 600 research studies, and surveys approximately 75,000 individuals annually. Burke Marketing is a member of the Council of American Survey Research Associations.

\* \* \*



9. Based on my experience as an expert in the fields of market research and usage surveying and based on the user survey conducted in January 1991 under my supervision, I have reached the following conclusions regarding the use of Quattro and Quattro Pro:

- Almost 9 out of every 10 Quattro and Quattro Pro users (88%) do not use the 1-2-3 compatible alternative menu arrangement to any extent whatsoever.
- Most usage of the 1-2-3 alternative menus appears to be driven by the desire to run macros created using Lotus 1-2-3. Of the relatively small number of Quattro and Quattro Pro users who have ever used the 1-2-3 alternative menus to *any* extent whatsoever, fully 35% report that the *only* time they use the 1-2-3 alternative menus is when *someone else* gives them a worksheet with 1-2-3 macros. Furthermore, two-thirds of those who have ever used the 1-2-3 alternative menus agreed with the statement that they use the 1-2-3 alternative menu arrangements "because [they] want to run worksheets that contain macros created using Lotus 1-2-3."

10. In the remainder of this Declaration, I will describe in detail the manner in which the survey was performed.

\* \* \*

34. Questions Q.7 asked the 60 respondents who stated that they had *ever* used the 1-2-3 menus which menu arrangement they were *currently* using. Twenty-nine (12% of the base of Quattro/Quattro Pro users) stated that they were now using the 1-2-3 alternative menu arrangement. In response to Questions 7 and 8, 21 respondents—8.7% of those who have ever used Quattro or Quattro Pro—stated that they use the 1-2-3 alternative menu arrangements most often.

35. The remaining questions (Q.9 through Q.10C) explored the users' reasons for using the Lotus 1-2-3 alternative menu arrangements of Quattro/Quattro Pro. In response to Question 9, two-thirds (66.7%) of those who had ever used the 1-2-3 menu arrangement agreed that they did so because they wanted to run worksheets that contained macros created using the Lotus 1-2-3 program. In response to Question 10A, 35.0% of those who had ever used the 1-2-3 menu arrangement agreed that they did so *only* when someone else gave them a worksheet with 1-2-3 macros.

36. In my professional judgment, the foregoing conclusions are accurate and reliable.

I declare that the foregoing is true and correct, and that I have personal knowledge of the matters set forth above, except as to those matters that are stated on information and belief. As to those matters, I believe them to be true. If called as a witness, I could and would competently so testify.

Executed under penalty of perjury this 26th day of September 1991 at San Ramon, California.

/s/ TIMOTHY A. BOYD  
Timothy A. Boyd

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

CIVIL ACTION NO. 90-11662-K

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LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.

*Defendant.*

---

DECLARATION OF EUGENE K. BUECHELE

1. I am currently Vice President, Engineering for the Network Systems Division of 3-Com Corporation. I make this declaration in opposition to the motion of Plaintiff Lotus Development Corporation ("Lotus") for summary judgment in the above-captioned matter. I have personal knowledge of the matters set forth below and could testify competently thereto if called upon to do so.

2. On September 15, 1980 I joined Personal Software, Inc. (later "VisiCorp"), a manufacturer and distributor of applications software for personal computers located in Santa Clara County, California. At the time, VisiCorp distributed and marketed the VisiCalc computer spreadsheet product under an exclusive license from Software Arts, Inc. Shortly after I joined VisiCorp, I became Director of Engineering with responsibility, among other things, for ongoing development of VisiCalc and of VisiCorp's VisiTrend/Plot computer software product.

3. VisiTrend/Plot had been designed by Mitch Kapor and licensed to VisiCorp. In October 1981, VisiCorp acquired all of Mr. Kapor's right, title and interest in the product for approximately \$800,000.

4. I am familiar with the user interfaces of Lotus 1-2-3 Version 1A and VisiTrend/Plot and have compared them for purposes of preparing this declaration. Apart from some of the words in the menu command hierarchy, the control mechanism of the 1-2-3 user interface, including the two-line moving cursor, was present in and adapted from the VisiTrend/Plot product.

5. These control mechanism similarities are set forth in the following chart:

<i>Feature</i>	<i>Lotus v. 1A</i>	<i>VisiTrend/ Plot v. 1.0</i>
Full Word Command Names	Yes	Yes
Highlighted, Moving Cursor	Yes	Yes
Command Selection Based on Highlighting, with Command Activation based on subsequent <Enter> key	Yes	Yes
Command Activation based on Abbreviated Command Name	Yes: 1 Letter	Yes: 2 Letters
Ordering of Commands by Anticipated Frequency of Use	Yes	Yes
Command Long Prompts following Highlighting on Status Line	Yes	Yes
Switch from GRAPH Display Mode to GRAPH Command Mode	<Escape Key>	<Escape Key>



6. The text of the command menus of the core functions in VisiTrend/Plot, a graphics and plotting product, is also similar to that of the graphics or "2" function of 1-2-3.

7. Unlike VisiCalc, the VisiTrend/Plot product was never transferred to Software Arts as part of the litigation settlement between VisiCorp and Software Arts. Hence, Lotus never acquired ownership of VisiTrend/Plot when it subsequently acquired Software Arts.

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct and that this declaration is executed this 27 day of September, 1991 at Palo Alto, Santa Clara County, California.

/s/ EUGENE K. BUECHELE  
Eugene K. Buechele

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

CIVIL ACTION No. 90-11662-K

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LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.

*Defendant.*

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SECOND DECLARATION OF EUGENE K. BUECHELE

1. I am the Managing Partner of the Prosper Group, a computer consulting firm. I make this declaration in support of the motion for reconsideration of Defendant Borland International, Inc. in the above-captioned matter. I have personal knowledge of the matters set forth below and could testify competently thereto if called upon to do so.

2. I have worked in the computer industry for 25 years with positions in engineering management, general management, and software development. During the period starting in September 1980 and ending in September 1984, I worked for Personal Software Inc. (later called VisiCorp) as the Director of Quality Assurance and Director of Engineering. During this period my responsibilities included managing and directing software developers; reviewing, selecting, and acquiring software programs from third parties.

3. On September 27, 1991, I executed a declaration in the above-captioned matter, which was subsequently filed as docket no. 135.

4. On August 12, 1992, I was shown this Court's July 31, 1992 order granting partial summary judgment for Lotus that stated that the holding in *Ashton Tate v. Ross*, 916 F.2d 516 (9th Cir. 1990), aff'g 728 F. Supp. 597 (N.D. Cal. 1989), was that "a document bearing 'a list of labels for user commands, many of which are common commands that were already available on other software programs' was not innovative or novel." This Court then went on to distinguish *Ashton Tate Corp. v. Ross* by stating, "[t]he relevance of that conclusion to this case is in some doubt in view of the fact that Lotus 1-2-3 is one of the programs on which the commands were already available. There is no evidence in this case that the commands available in 1-2-3 were common commands at the time of Lotus' authorship."

5. On that day I began reviewing other software packages that were available at the time of the initial release of Lotus 1-2-3. For commands that were new to 1-2-3 Release 2.0, I expanded my search to software that was available before the initial release of that version.

6. In the ten days since I began my analysis, I have been able to review the following 15 software packages, all of which were available prior to the relevant release of 1-2-3: VisiTREND/VisiPLOT, Personal Software, Inc.; VisiCALC, Personal Software, Inc.; VisiFILE, Personal Software, Inc.; PC-DOS Version 1.1, International Business Machines Corp. and Microsoft Corp.; MULTIPLAN, International Business Machines Corp.; MVS/TSO, International Business Machines Corp.; VM/CMS, International Business Machines Corp.; Fortran IV, International Business Machines Corp.; TROLL/1, National Bureau of Economic Research, Inc.; BBL II (Basic Business Language), Core & Code, Inc.; CP/M, Digital Research, Inc.; Desktop/Plan, Marton, Inc.; SUPERCALC,

Sorcim; Cobol 68 and 74, United States of America Standards Institute; and dBase, Ashton Tate.

7. Approximately 80% of the 1-2-3 commands can be found in these fifteen earlier software packages, which use the same basic words as Lotus 1-2-3 to perform analogous functions. These commands are: Worksheet, Global, Format, Column-Width, Recalculation, Columnwise, Rowwise, Automatic, Manual, Iteration, Protection, Enable, Disable, Default, Printer, Left, Right, Top, Bottom, Page Length, Wait, Setup, Name, Quit, Directory, Status, Update, Other, Currency, Date, Time, Quit, Help, Clock, Quit, Insert, Column, Row, Delete, Column, Row, Column-Width, Set, Reset, Hide, Display, Erase, Titles, Both, Horizontal, Vertical, Clear, Window, Horizontal, Vertical, Syncy, Unsync, Clear, Status, Quit, Range, Format, Label, Erase, Name, Create, Delete, Labels, Right, Down, Left, Up, Reset, Table, Justify, Protect, Unprotect, Input, Value, Copy, Move, File, Save, Copy, Add, Subtract, Values, Erase, List, Text, Numbers, Directory, Print, File, Graph, Type, X, Reset, Graph, X, Quit, View, Save, Options, Legend, Format, Graph, Quit, Titles, First, Second, X-Axis, Y-Axis, Grid, Automatic, Manual, Format, Indicator, Quit, Automatic, Manual, Format, Indicator, Quit, Skip, Color, Quit, Quit, Name, Use, Create, Delete, Reset, Quit, Data, Fill, Table, Reset, Sort, Data-Range, Reset, Go, Quit, Query, Input, Output, Find, Extract, Delete, Reset, Quit, Multiply, Regression, Output Range, Reset, Go, Quit, Create, Edit, Input-Column, Output-Range, Reset, Go, Quit, System, and Quit.

8. I have also compared the commands in a pre-Lotus 1-2-3 release of VisiCalc with the Lotus 1-2-3 command set and I have found that there are many similar commands.

9. Based upon this analysis, it is clear to me that the Lotus 1-2-3 command set is comprised of commands that were in common use in other copyrighted software programs before the release of Lotus 1-2-3.

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct and this



J.A. 316

declaration is executed this 27 day of August, 1991 at Palo Alto, Santa Clara County, California.

/s/ EUGENE K. BUECHELE  
Eugene K. Buechele

J.A. 317

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

CIVIL ACTION  
No. 90-11662-K

---

LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.,

*Defendant.*

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DECLARATION OF JENNIFER DOS REMEDIOS

I, Jennifer dos Remedios, declare:

1. I am a legal assistant employed by the firm of O'Sullivan Graev & Karabell, counsel for plaintiff herein.
2. I am familiar with the structure of the menu commands of Lotus 1-2-3 in Quattro, the 123.MU menu tree file in Quattro Pro and VP-Planner Plus.
3. Submitted herewith as Exhibit A are two bound volumes containing prints of screen displays from Lotus 1-2-3, Release 2.01; the 123.RSC menu tree file in Quattro Version 1.01; the 123.MU menu tree file in Quattro Pro Version 1.0; and VP-Planner Plus.
4. I created the prints initially from the respective software programs while in operation, using a Compaq 386s/20 notebook computer connected to a Hewlett-Packard PrintJet XL color printer and specialized software called

**Pizzazz Plus.**

5. I combined the sets of prints of screen displays from Quattro and Quattro Pro to allow for their presentation together on a single page. All prints were then reduced to 78% in a process of color duplication. The legends were supplied by me and added in the duplicating process.

6. The contents of the volumes are as follows:

*Volume I***Tab A—VP-Planner Plus**

Each item in the top-level menu is shown with the cursor positioned on it.

The "Worksheet/Global", "Worksheet/Global/Format", and "Worksheet/Global/Format/Fixed" menu items are shown with the cursor positioned on each.

The "Range", "Range/Format", and "Range/Format/Fixed" menu items are shown.

The top-level menu is shown after the menu display was reconfigured according to the 1-2-3 display as in the videotape demonstration of Larry Roshfeld.

**Tab B—Quattro Pro 1.0 Mouse/No Mouse**

The screen display of Quattro Pro 1.0 is shown with the mouse device attached and not attached to the computer, and with the cursor on the "Worksheet" item in the main menu and on the "Worksheet/Global" item in the following sub-menus.

**Tab C—Main Menu Commands**

The screen displays for each item in the main menu of Lotus 1-2-3 is shown on the right-hand page, with screen displays for corresponding

items in the Quattro Pro 123.MU menu tree and Quattro 123.RSC menu tree shown on the facing pages.

**Tab D—Worksheet, Range, Copy, Move, File, Print, Graph, Data, System Quit Commands**

Screen displays for each item in the first menu following the selection of each item from the main menu in 1-2-3, together with the corresponding items in Quattro Pro and Quattro, are shown.

**Tab E—Worksheet Sub-Commands**

7. Items in the various sub-menus branching from the "Worksheet Commands" are shown for each program.

8. There are four commands in the Lotus 1-2-3 items depicted for which there are no Quattro counterparts. There are no such instances with respect to Quattro Pro. The total number of 1-2-3 commands depicted is 327. All 1-2-3 menus are shown to the fourth level.

*Volume II***Tab A—Range Sub-Commands****Tab B—File Sub-Commands****Tab C—Print Sub-Commands****Tab D—Graph Sub-Commands****Tab E—Data Sub-Commands**

I declare under penalty of perjury that the foregoing is true and correct.

Executed at New York, New York on November 1, 1991.

/s/ JENNIFER DOS REMEDIOS  
Jennifer dos Remedios



UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

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Civil Action No. 90-11662-K

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LOTUS DEVELOPMENT CORPORATION,  
*Plaintiff,*

—vs.—

BORLAND INTERNATIONAL, INC.  
*Defendant.*

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DECLARATION OF JAMES C. EMERY

I, James C. Emery, declare:

1. I am Professor of Decision Sciences at the Wharton School of the University of Pennsylvania. A true copy of my current curriculum vitae is annexed hereto as Exhibit A. I make this declaration in support of the motion for summary judgment of plaintiff Lotus Development Corporation ("Lotus"), and in opposition to the cross-motion for summary judgment of defendant Borland International, Inc. ("Borland"). As the Court will recall, I also testified at Lotus' request in *Lotus Development Corporation v. Paperback Software International*, Civil Action No. 87-0076-K.

2. I consider myself professionally knowledgeable in the development and deployment of management information systems, computerized information systems, decision support

systems, and the use of such systems as critical resources in the efficient management of corporations at all levels from logistical planning to strategic decision making.

3. "Management information systems", or "MIS", is a discipline comprehending both transaction processing systems and "decision support systems", which are computer systems that provide data retrieval and modeling functions to aid human decision making.

4. I have taught both undergraduate and postgraduate courses in the areas of decision and information science, management, and computers at the University of Pennsylvania from 1965 to 1974 and from 1980 to present, and at the Massachusetts Institute of Technology from 1959 to 1965, except for leave periods. Among the courses I have taught have been courses in MIS, systems analysis (a management school course in the design and implementation of computer-based systems), and quantitative methods in business analysis. In my courses, I have regularly addressed user interface issues; for example, I have covered such issues in my systems analysis course, using Ben Shneiderman's book, *Designing the User Interface*, as one of the textbooks for the course.

5. During the 1990-1991 academic year, I served as the Grace Murray Hopper Visiting Professor in Computer Science at the Naval Postgraduate School in Monterey, California. I taught a course on information systems policy for organizations and engaged in research for the Director of Defense Information, U.S. Department of Defense, concerning the use of the Ada programming language for developing management information systems.

6. I agreed to consult for Lotus in this case last April, when I was in Monterey.

7. I have published two books and fifty-eight articles in the areas of management information systems, the economics of information, planning and control systems, logistical systems, computer networks, and decision support systems.

8. Since January 1989 I have served as Senior Editor of the *MIS Quarterly*, a leading academic journal in the information science field, with responsibility for the review of articles for publication. Part of my responsibility is to assign articles submitted to the publication to various of its approximately 25 associate editors for review.

9. From 1974 to 1979, I was Executive Director of the Planning Council on Computing in Education and Research for EDUCOM, a membership association of colleges and universities established for the purpose of improving the effectiveness of computing in higher education on matters pertaining to education, research, and administration. I also served as its President from 1976 to 1979.

10. While with EDUCOM, I had extensive contact with vendors of commercial software, including microcomputer software, concerning issues involved in the technical support of software products, including human engineering issues such as the importance of user interface design in making software easier to use and learn, site licensing, and product documentation.

11. I have served as a member of the boards of directors of the following corporations during the periods specified: (a) from 1979 to 1988, Gartner Group, a leading market research and technology assessment company in the area of information systems; (b) from 1973 to 1988, Data Architects, Inc., a company that develops custom software for large mainframe computers as well as large telecommunications systems for the financial services industries; (c) from 1978 to the present, Human Design Systems, Inc., a company which develops and manufactures computer hardware (primarily terminals); (d) from 1983 to 1986, Conceptual Instruments, Inc., a company that developed a desktop management software product for microcomputers; (e) from 1984 to 1985, Desktop Software Corporation, a company that developed database software for microcomputers; (f) from 1987 to the present, Colonial Management Group, a mutual fund company that manages a variety of mutual funds, for which I monitored the

development of a computerized system for the purposes of keeping track of shareholder information, permitting shareholders to switch investments between associated funds, and other similar functions; and (g) from 1989 to 1990, PSI, Inc., a company that developed customized large-scale application software.

12. In my capacity as a director of these companies, I have had considerable exposure to issues concerning the development, marketing, pricing, and licensing of software. As a director of Conceptual Instruments, Inc. and Desktop Software Corporation, I dealt with issues specifically concerned with the design and marketing of microcomputer software.

13. I have personally developed a variety of computer programs. For example, I developed a microcomputer-based program used by The Wharton School for the purposes of allocating and scheduling rooms for classes and other activities. In the past, I completed a feasibility study and the preliminary design for a computer software system for billing and receiving payments for pension fund contributions for the Presbyterian Pension Fund, a pension fund associated with the United Presbyterian Church. In addition, between 1956 and 1959, as an employee of Westinghouse, I participated in the development of several large-scale applications in the area of inventory control and production scheduling.

14. I have also consulted in the areas of logistics, MIS planning, and decision support systems. Some of these engagements involved the development of application programs. For example, in one such engagement I developed a microcomputer-based model for estimating construction costs for a large engineering design company. In a brief engagement for IBM Corporation, I helped to analyze the business potential of the "systems integration" market, in which IBM would provide part or all of a client's MIS support services under contract. In an ongoing research project funded by Digital Equipment Corporation, I am analyzing the use of information technology for the more effective planning and control of the company's business activities.



15. Prior and subsequent to my retention in this matter, I have communicated with John Seamster of Borland, whom I understand to be responsible for its educational market activities, as a user of its "Paradox" database software program. When Mr. Seamster invited me to attend a training session concerning Paradox after I agreed to serve as a consultant for Lotus, I informed him of the potentially adverse relationship I might have with Borland. Mr. Seamster later told me that he did not think my retention by Lotus would cause a problem with respect to the training session, and in addition he said that Borland's lawyers had asked him to invite me to talk with them. I declined that invitation, which I considered inappropriate.

*The user interface of a computer software product*

16. The "user interface" of a computer software product is the communicative link between the human user and the software product. The user interface defines the software product's appearance as well as its impression, communicative impact, and effect upon the user.

17. The user interface creates the product's identity by governing how users think about the product and how they conceptualize the tasks they deal with when using the product. The user interface is the principal determinant of the software's ease of learning and ease of use, and of the user's general satisfaction with the product.

18. Where a microcomputer application user interface employs menus, the menus and menu structure are typically communicative in nature, expressing the capabilities of the software to the user.

19. There is, for all practical purposes, potentially infinite variation in the expression of a product's menus and menu structure, through the selection of the set of tasks represented by the menu options, the choice of words or symbols used to represent the menu options, any associated description of menu options, and the clustering and sequencing of menu

options in a meaningful and comprehensible hierarchical structure.

20. The communicative and expressive aspects of the menus and menu structure are critical to the value of the software.

21. Moreover, for any given set of functions performed by a program, a practically infinite variety of user interfaces can be developed. Thus, it is technically unnecessary for software programs to employ similar user interfaces (or similar menus or menu structures) in order to provide comparable functionality.

22. In fact, microcomputer programs intended to address the same basic market—such as spreadsheet manipulation and calculation—need not provide the same precise range of functionality. There is almost always a large variety of ways to implement any individual operation or component of the program's functionality.

23. Designers must make judgments about the applications for which a software product will be used and then choose the "primitives" to include in the product that provide the best balance between ease of use, ease of learning, and cost. (A "primitive" is an individual operation the software is to perform without having to combine other operations.)

24. Different designers are likely to select for inclusion quite different sets of functions. Too much functionality clutters a program with features that are used rarely, makes the program difficult to learn, and adds to its cost. Too little functionality leaves the user dissatisfied because the program will not perform the tasks the user wishes or requires the user to combine multiple primitive steps to accomplish a desired task.

25. Typically, a small proportion of the commands in a software product will constitute the majority of its usage—that is, most of the tasks that users will wish to perform are articulated in a relatively few command sequences. A developer may find it sufficiently valuable from a marketing perspective to invest the resources necessary to provide

functionality that it does not anticipate will be frequently used. Nevertheless, the value of the product will depend primarily upon the small set of most frequently used commands and their associated functionality.

26. One basic distinction in user interfaces for micro-computer applications software is between those that are "command-driven" (*i.e.*, in which the software's operations are controlled by command sequences inputted by the user without the presentation of alternatives by the software to the user), and those that are "menu-driven" (*i.e.*, in which the operations are controlled by the user's selection of command options from developer-determined groups of choices presented by the software).

27. For "menu-driven" user interfaces, the organization of the menus into a menu structure (often depicted as a "menu tree", to reflect the branching of the structure and the logically dependent nature of those commands that "branch" from others) itself presents a major conceptual challenge to the developer. Many subjective decisions are required, concerning such matters as definition of the "primitives" to express in the menu structure, selection of the desirable number of levels in which the command options should be presented, selection of the command choices to group within each level, and selection of the words or other symbols to use to represent each command option.

28. The subjective decisions made in creating a user interface are among the most creative and challenging in micro-computer software development, and the most fraught with risky assumptions.

29. The assumptions reflect the developers' effort to project themselves into the minds of the intended users of the software and to imagine the approach to the problem addressed by the application that will satisfy the users' needs. It is very easy for developers to introduce elements that impede, rather than enhance, users' understanding.

30. The assumptions are risky because of the inevitable uncertainty as to how successfully the developers' approach will, in fact, meet the needs of users and eventually gain acceptance in the marketplace, as well as the possibility that other developers may simultaneously be developing products with similar functionality and/or different interfaces that users might prefer.

31. As Prof. Olson points out in her article, "The Growth of Cognitive Modeling in Human-Computer Interaction Since GOMS" (Judith R. Olson and Gary M. Olson, *Human-Computer Interaction*, 1990, Vol. 5, pp. 221-265), such cognitive principles as may be emerging in user interface design do not shed light as to why people buy software. There is as yet no science to predict what makes for a successful software product.

#### *User interface design in software development*

32. I have read the declarations of Prof. David Kieras, Dr. David Liddle, and Prof. Judith Olson submitted by Borland in this action, and the declarations of Prof. Bernard Galler and Mr. Mitchell Kapor submitted by Lotus, to which they largely respond. In criticizing Prof. Galler's statements concerning the relative significance of user interface design in the development of a successful software product, both Prof. Kieras (at ¶¶ 43-49) and Dr. Liddle (at ¶¶ 38-40) observe broadly that user interfaces for software programs of widely divergent types may be more or less interactive or complex, depending in part on their nature or intended purpose.

33. The degree of interactivity or complexity to employ in the user interface of a software product is itself a design decision made by the developer. Whenever humans are involved—which is almost always the case except in a completely automated process—user interface design issues must be addressed. (Even for a completely automated process, a human interface is needed for a human to set parameters and rules to guide the operation of the computer program.)



34. For example, it is not apparent to me why the example Dr. Liddle gives (at ¶ 40), of a "program to control the flow of traffic", would not involve complex user interface issues if it was intended for the support of human decision-making. The success of such a product may depend heavily on the effectiveness of the interface (e.g., a graphical display of the road network with icons to show congestion points).

35. Moreover, whatever validity there may be at the most general level in the proposition that Prof. Kieras and Dr. Liddle advance, it has little to do with the software involved here.

36. I am unaware of any successful microcomputer software application in the marketplace for which the user interface design is *not* a major component of the product. Indeed, Prof. Kieras in his declaration (at ¶ 47) uses a "word processor"—by which I understand him to mean a microcomputer word processing application product—as his example of a product requiring considerable effort in its user interface design.

37. Almost all software products raise user interface design issues, and the design of a good user interface is almost always relatively expensive, regardless of the computational platform on which the software is intended to operate, e.g., mainframes, microcomputers, etc. Traditionally, mainframe software user interfaces have not been particularly "friendly" because the economics of the mainframe market generally favor imposing a relatively heavy burden of training on the user instead of expending the resources necessary to develop user interfaces that are easy to use and easy to learn.

38. The microcomputer software market, in contrast, is characterized by the need to appeal to a large number of potential purchasers (a "mass market"), who will not be willing to assume the cost of training to overcome poor user interface design. Thus, user interface design is critical in successful microcomputer product development.

39. Dr. Liddle further asserts in his declaration (at ¶ 37) that the well-known Fred Brooks "rule of thumb" for scheduling software tasks (published in *The Mythical Man-Month*) is inapplicable to "many, if not most, PC [microcomputer] programs", because they are often written by "smaller teams" following different "dynamics" of development. (*Id.* at ¶ 36)

40. I am familiar with the "small team" paradigm for software development, which was characteristic of the entrepreneurial origins of the microcomputer software community. Indeed, in an article I have recently written, I argue that the "small team" approach can effectively be applied to the development of what would traditionally be viewed as large-scale systems applications.

41. It is true that in the "small team" approach, the initial design phase is relatively less important than in the traditional Brooks model, because the more flexible "small team" can adapt more readily to ongoing design changes. That same fluidity may make it more difficult to quantify the degree of effort expended exclusively in the design of a product's functionality and user interface.

42. However, neither of these factors diminishes the overall significance of the user interface design to "small team" software development. Rather, consideration of user interface design issues should, and frequently does, pervade the entire process. Whether the user interface design is initially specified in detail by one team and handed off to other teams for implementation, as under the traditional model, or evolves through the continual attention of a single integrated team, the point remains that user interface design is the most difficult, creative, and critical part of software development.

43. In my own experience in computer software development for a variety of computational platforms, including microcomputers, well over half of the development effort has been spent in the design of the program's functionality and the user interface that expresses that functionality.

44. Neither can the significance of the user interface design be measured by the time spent in "fine-tuning" the details of design towards the end of the process, as Prof. Kieras suggests in his declaration (at ¶ 48). As stated above, successful user interface design should pervade the entire development process. Moreover, even the "fine-tuning" of "detail" can require significant creativity and judgment, if the product is to be of commercial quality. To a significant extent, successful design is the cumulation of just such details.

45. Moreover, I disagree with that portion of the same paragraph in Prof. Kieras' declaration in which he interprets Mr. Kapor's description of the development of 1-2-3 as suggesting that the design of the 1-2-3 menu structure was a "detail" addressed solely at the end of its development. I also believe Dr. Liddle exaggerates in his declaration (at ¶ 41) when he describes the effort as "merely the identification and organization of command words, which was done at the very end of the development cycle."

46. As I interpret Mr. Kapor's description, both the determination of 1-2-3's functionality and the particular expression of that functionality in its user interface and menu structure apparently consumed much, if not most, of Mr. Kapor's (and others') efforts throughout the development process.

#### *Coding, "cloning", and "emulating"*

47. It is Borland's witnesses, not Prof. Galler, who confuse the time spent on coding a product with its significance to the final product. For example, the importance of the user interface or the effort involved in its design has almost nothing to do with the obvious fact that some programmed code must generate it, as Dr. Liddle suggests in his declaration (at ¶¶ 42-43).

48. If the program's range of functionality and user interface have been determined in sufficient detail, writing the program code tends to be a routine effort for professional programmers (although the problem-solving skill of the programmers clearly affects the efficiency of the resulting code).

49. If the programming is inadequate to provide an acceptable level of performance—in terms of response time, memory usage, or hardware requirements—the code may negatively affect the user's perception of the product. At the same time, good code cannot overcome a poor user interface. The user interface remains the critical factor in users' perceptions.

50. Moreover, to recognize that programming code can be a time-consuming and difficult task under certain circumstances does not invalidate the point that the most significant *creative* activity and effort in software design is expended in creating the user interface, which is both my opinion and, as I understand it, the gist of Prof. Galler's.

51. In his declaration (at ¶¶ 45-50), Dr. Liddle also quarrels with Prof. Galler's statements regarding the relative difficulty of developing "clone" software, on the grounds that the programming of a "clone" would still need to achieve an acceptable level of performance for the product to be "economically viable" and that Borland's products are not, in his view, "clones" under Prof. Galler's definition.

52. These statements miss the point. Whether a "clone" product would be "economically viable" would depend on a number of factors, including price, the extent of marketing expenditures, the nature of the relevant market(s), and the "clone" developer's cost structure, in addition to the performance of the code for a "clone". For example, a "clone" product with relatively poor performance could be "viable" if its price was a small fraction of the original's, if a market of potential purchasers existed whose preferences would be satisfied by substituting price for performance, and if the "clone" developer's volume of sales could support its cost structure.

53. Moreover, given existing software development tools and practices, it is certainly not conceptually difficult to generate the code for a "clone", or for a program that "emulates" the user interface of an existing product by displaying the same menu structure and accepting the same commands (even



if other aspects of its visual appearance may differ). Development of an "emulation" product would be even less difficult if an adequate computational engine already exists to which the "emulation" commands could be readily "mapped", such as that provided by the Quattro and Quattro Pro "Menu Builder" and "Menu Equivalent Command" facilities. Nothing that Dr. Liddle (or Professors Kieras or Olson) states is to the contrary.

54. The maker of an "emulation" product, like the "clone" maker, would still derive great benefit from the development effort expended by the creators of the original software, since it can avoid much of the effort in functional specification or creation of the "emulation" user interface.

55. The maker of an "emulation" product, like the "clone" maker, also gains the advantage of reducing its market risk, since it already knows that a market exists for software having the characteristics of the original product, and knows that a pool of potential purchasers exists who are familiar with the original product's menu structure and commands.

56. That familiarity would make it more likely that users of the first product would purchase the "emulation" product, even if their ultimate objective is to take advantage of any additional functionality the new product might provide. Users of the first product will perceive lower "transition costs" to themselves in switching to the new product because they will believe that their familiarity with the original product's commands can be applied to the second product, providing both some assurance that they will be able immediately to perform the work they had done with the first, and likely making it easier for them gradually to learn any new commands associated with the second product's additional functionality.

#### *The menus and menu structure of 1-2-3*

57. Programs to permit the electronic construction and manipulation of spreadsheets, such as Lotus 1-2-3, have become widely accepted in business, industrial, scientific and technological settings. They are used to enhance productivity

in many white-collar tasks associated with the manipulation and presentation (in both tabular and graphical form) of numerical, financial, and statistical data. Indeed, spreadsheet programs have become invaluable in performing complex calculation, analysis, and modeling, and in forecasting using projection techniques.

58. I am an experienced user of microcomputer spreadsheet software, having used VisiCalc, 1-2-3, and Excel extensively for purposes of modeling, analysis, and graphical presentation. I regularly use spreadsheet software for such tasks, as well as the creation and management of small databases (even including my address/telephone list), and the regular preparation and maintenance of class lists and grade reports. I have taught courses using each of the three programs.

59. I am familiar with 1-2-3, Releases 1A, 2.0 and 2.01. In addition to my use of 1-2-3 as described above, in preparation for this testimony I have reviewed each of these releases of 1-2-3 in operation and reviewed their user's manuals.

60. 1-2-3 is a business productivity software program for microcomputers that integrates spreadsheet, graphing, and database capabilities.

61. In my opinion, 1-2-3 presents the user with a clear and easy approach to operations associated with the construction and manipulation of spreadsheets, databases, and related graphs.

62. In my opinion, 1-2-3's user interface includes numerous discrete elements, including its menus and menu structure, that reflect creative choices and subjective decisions by its developers.

63. In my opinion, the user interface of 1-2-3, including its menus and menu structure, is distinctive among those that could be created to express the idea of a spreadsheet program.

64. 1-2-3's menus and menu structure, in my opinion, convey a substantial amount of information and explanation to the user, giving them an important communicative and

expressive aspect. I believe this to be true even if the "long prompts", or second (lower) line of the 1-2-3 moving cursor menus, are excluded from the analysis.

65. The menu commands and menu structure of 1-2-3, contrary to the statements of Borland's expert witnesses, do not "perform[ ] numerical calculations" (Dr. Liddle, ¶ 51; Prof. Olson, ¶ 28) or "define[ ] the steps or procedures users may follow to perform numerical calculations". (Prof. Kieras, ¶ 35) These statements reflect a fundamental misapprehension concerning the nature and role of the 1-2-3 menu commands.

66. To begin with, the menu commands do not, themselves, provide a means for users to invoke the program's capabilities with respect to numerical calculation, nor do they "define the steps or procedures" a user must employ to perform such calculations. Those calculations are indicated by the user to the program through the inclusion of formulas, "@ functions", and arithmetical operators (such as the "+" or "-" sign) in the cells of the spreadsheet. The menu commands, in contrast, primarily concern the manipulation of data and text in the spreadsheet.

67. For example, Prof. Olson's characterization in her deposition (at Vol. 2, pp. 55-56 & 82) of alphabetical sorting as a form of "numerical calculation" is erroneous and reflects little understanding of either standard programming techniques or the internal workings of a program such as 1-2-3. (Copies of pages referred to throughout this declaration from Prof. Olson's deposition are attached hereto as Exhibit B.)

68. If Borland's witnesses genuinely intend to suggest that the 1-2-3-menu commands constitute some type of complicated method for users to perform numerical calculations such as multiplication, they are completely in error.

69. Moreover, the misstatements reveal that Borland's witnesses are confusing the program's underlying functionality with the particular expression of that functionality in its user interface. The user interface and menu structure of a software program, however, have a distinct existence and purpose.

70. The words in the 1-2-3 menu structure do not actually perform or instruct the computer to perform particular operations. Before the program will begin to perform an operation, the user must take an action—such as typing a series of keystrokes—that will then cause the software to instruct the computer to work.

71. It is inaccurate to equate, for example, the screen display of the word "Print" with the electronic processes whereby the program instructs the computer to cause certain information to be physically printed. The purpose for displaying the word "Print" on the screen is purely communicative in nature. In the context of the 1-2-3 menu structure, the word conveys to the user that one available type of operation that the user can instruct the computer to perform pertains to the program's printing capabilities. The program need not convey any such information on the screen in order to provide those functional capabilities, as would be true, for example, with a command-driven user interface.

72. That the words in the 1-2-3 menus may, in some circumstances, provide a lesser quantity of information than the long prompts or the documentation or the "help" screens does not imply that they are less communicative in nature. The difference is one of degree, not of kind.

73. It is possible to overstate even the difference in degree between the words in the 1-2-3 menus and the long prompts. To take a typical example, it is questionable how much additional information is conveyed by the long prompt "Set global format" beyond that already conveyed by the menu commands "Worksheet/Global/Format". It cannot meaningfully be said that the former is explanatory (and therefore communicative in nature) while the latter is not.

74. Neither is it accurate to suggest, as do Borland's witnesses in their declarations (Prof. Kieras, ¶ 38; Dr. Liddle, ¶ 52; Prof. Olson, ¶ 32), that the words in the 1-2-3 menus "identify the functions that are available in the system" in the sense that they are merely markers or placekeepers for particular commands. Rather, the words in the menus provide a



form of structured dialogue that helps to *inform* the user about the nature of each command.

75. Moreover, each word in the 1-2-3 menus does not correspond to a particular primitive of underlying functionality. Selecting the "Worksheet" menu item, for example, does little other than cause the program to display the next set of choices in the branching sub-menu. The "function" of that menu item is to tell the user that if he selects this, another series of choices will become available that will affect the "Worksheet". That is communication, not calculation.

76. It is this same interactive and dynamic nature of the menus that distinguishes the words in the 1-2-3 menus from the buttons on a VCR or any other set of static controls for a machine or device.

77. The expressive nature of the 1-2-3 menus is not diminished by the fact that sophisticated users often memorize frequently used command sequences, and do not need to refer to the menus to invoke them. Part of the brilliance of the 1-2-3 design is precisely that it allows users to learn the menu commands gradually, and to increase their skills incrementally with use. The words in the menus and the menu structure undeniably assist in that learning process. In addition, even sophisticated users may need to refer to the menus for assistance in unfamiliar parts of the menu tree, to select commands that they do not frequently use.

78. Thus, Borland's witnesses are incorrect when they suggest in their declarations (Dr. Liddle, ¶ 51; Prof. Olson, ¶ 31) that the 1-2-3 menu commands and menu structure are "inseparable" from 1-2-3's functionality, or from a "command system" providing access to that functionality. Any word or symbol could, as a technical matter, be used instead of the words used in the 1-2-3 menus to represent functionally comparable commands, and such words or symbols could be arranged in any number of menu structures that could be "mapped" onto the same underlying functionality.

79. I see no distinction in this regard between the role of words in menus on the one hand, and of icons or other pictorial matter on the other. Users will still associate a specific icon in a program with one of its specific commands, and subtle differences in the expression of icons could inhibit users' ability to learn a new user interface in the same way that the use of similar but different words could. If the words in the 1-2-3 menus are "inseparable" from its functionality, so too would icons be "inseparable".

#### *Alternatives to the 1-2-3 menu structure*

80. In my opinion, the menus and menu structure of a successful spreadsheet program could be very different from those of 1-2-3. This would even be true of a spreadsheet program performing all the same functions as 1-2-3.

81. Borland's witnesses do not, as I read their declarations, directly refute this point. It is clear that when they fault Prof. Galler in their declarations for making an assertion similar to mine in the preceding paragraph (Dr. Liddle, ¶ 67; Prof. Olson, ¶ 50), they do so only because they have artificially defined the functionality of 1-2-3 to include the user's ability to execute, modify, and "debug" macros previously written for use with 1-2-3 in another program, *without* having to learn a different menu structure. (See ¶¶ 115, 134-139, below.) Indeed, Prof. Olson admitted at her deposition (at Vol. II, pp. 157-158) that Prof. Galler's statement would be true if only the objective of executing 1-2-3 macros in another program were omitted.

82. Borland's witnesses also assert in their declarations (Dr. Liddle, ¶ 54; Prof. Olson, ¶ 35) that the potential number of words or synonyms in the English language that could sensibly be chosen to convey the meaning of each word used in the 1-2-3 menus to represent a menu command, taken individually, is relatively limited. I do not believe that this point, even assuming it to be true, suggests any meaningful limitation on the potential variation in spreadsheet user interfaces or menu structures.

83. To begin with, it assumes an unnecessary constraint of using words to represent menu choices rather than icons or other symbols. It also assumes that the organization of the menu tree is fixed, so that the developer's only option is to find synonyms for the same set of menu commands.

84. Without the latter constraint, it is clear that the potential variation in menu structures is enormous. Assume that a program contained only nine items at the leaves, or nodal points, of its menu tree. The number of possible arrangements of that set into one or more menu levels (including the possible combination of two or more items into a single item) exceeds 1,000,000,000. The number increases markedly with the addition of each item to the set. The number of possible arrangements for a ten-item set would exceed 38,000,000,000. I have not calculated the number of possible arrangements for a set of 469 menu items, but it certainly vastly exceeds the estimated number of elemental particles in the universe which, if my memory serves me, is on the order of  $10^{80}$ .

85. Even if one accepts the arbitrary constraint of allowing for only one such arrangement of menu items, simply allowing for the choice of several potential *synonyms* to represent each such item still produces an enormous potential variation in menu trees. The total would be derived by the simple formula  $s^i$ , where  $i$  represents the number of menu items and  $s$  represents an assumed constant number of potential synonyms. Applying this formula to the 1-2-3 menu arrangement and assuming three possible synonyms for each menu item, the number of possible variations in the 1-2-3 menu tree would be  $3^{469}$ , or  $10^{223}$ . As large as this number is, it is less than the number of possible rearrangements of the items in the 1-2-3 menu tree described in the preceding paragraph. When one takes into account both sources of variation (structure and synonyms) the number grows explosively.

86. Moreover, a successful spreadsheet product could differ from 1-2-3 in its functionality. The potential variation in menu trees that could result from possible differences in functionality is literally unknowable.

87. The validity of the point is confirmed by ample "existence proofs". Numerous examples can be found of programs that provide spreadsheet functionality comparable to 1-2-3 but contain user interfaces, including menus and menu structures, differing from 1-2-3. As I mentioned in my testimony in *Paperback*, these would include Microsoft's Excel, Javelin, Lotus' Symphony, SuperCalc4, MultiPlan, VisiCalc, and others.

88. Excel is similar in idea to 1-2-3—that is, it permits the user to perform the same basic functions incident to constructing and manipulating a spreadsheet. However, its user interface, including the structure, organization, and content of its menus and menu tree, is quite different from that of 1-2-3.

89. Javelin is a product that provides an entirely different user interface and approach to most of the tasks that spreadsheet programs are used to perform, such as the use of mathematical functions and the ability to perform the manipulation of numerical and statistical data.

90. Symphony is an integrated product incorporating five functional components, performing spreadsheet, word processing, communications, database, and graphics tasks. The menus and menu structure of Symphony's spreadsheet component are different from Lotus 1-2-3, yet provide functionality comparable to that provided in 1-2-3.

91. Indeed, Borland's own Quattro and Quattro Pro products are self-contained demonstrations of this point. Each provides a so-called "123-compatible" menu tree or "emulation" mode, and at least one other that is different from 1-2-3. The documentation for each product provides tables (Table 4.3 in the Quattro "Reference Guide" and Table 3.3 in the Quattro Pro "@Functions and Macros" guides) comparing the menu commands in the different menu trees to the so-called "Menu Equivalent Commands", which constitute Borland's own form of macro notation. Viewing the Menu Equivalent Commands as a specification of the functional "primitives" contained in the products, these tables demonstrate precisely how differ-



ent menu arrangements can readily be "mapped" to the same underlying functionality.

*Is the 1-2-3 menu structure a "system"?*

92. I have already noted that Borland's witnesses err in describing the 1-2-3 menu commands and structure as a "system for performing numerical calculations", because they neither perform calculations nor are they the means by which the user instructs the program to perform calculations. I also believe that their use of the term "system" is inappropriate in this context and, ultimately, beside the point. Labeling the menu items and menu structure as a "system" does not alter their essential nature as a communicative medium.

93. "System" is a term with many usages and varying definitions, both within and among different disciplines. For example, Dr. Liddle describes a system in his declaration (at ¶ 25) as "a set of actions and results defined in particular relationships to one another." Prof. Kieras, in his deposition (at Vol. 1, p. 159), defined a system as "a set of things that have relationships with each other." (Copies of pages from Prof. Kieras' deposition referred to throughout this declaration are attached hereto as Exhibit C.)

94. In my own work as a systems designer and analyst, I have previously defined a system as "an entity composed of related parts directed at a purposeful activity."

95. Thus, in systems analysis, one could describe an organization comprised of various coordinated subunits as a "system" for manufacturing, distributing, and selling goods, or an integrated collection of computer hardware and software as a "computer system" for processing information.

96. A "system" almost always has parts that themselves could be described as "systems" or "subsystems", and is almost always itself a part or "subsystem" of a larger "system"

97. Every "system" is defined essentially arbitrarily for the purpose at hand. What might be called a "system" from one

perspective could also be viewed as a component of a higher-level "system".

98. A system's "boundary" defines the activities considered to be integral parts of the system, and everything not included within the boundary is its "environment". For example, the president of a large organization could legitimately consider the entire organization as a system, whereas a plant manager within that same organization would likely view its subunits other than the plant as part of the plant's environment.

99. It is possible to describe an application computer program, comprising various modules and subroutines, either as a "system" for providing certain computational capabilities, or as a "subsystem" of the "information system" of which it is a part.

100. Indeed, any computer program that is broken down into more than one monolithic part could be viewed as a "system". Software development is an archetypical systems design problem.

101. In my opinion, it is a misuse of the term to describe the words in the 1-2-3 menus and their organization, standing alone, as a "system". To the extent that the definition can be stretched to apply to them, they are a "system" only in the same sense that a textbook or even a poem would be. It adds little to our understanding of menus, however, to describe them as a system.

102. An essential characteristic of a system is that it accepts input upon which it operates in a functional manner to generate output. The 1-2-3 menus, themselves, neither accept input nor generate output. They are, instead, a communicative medium that conveys information to the user to allow the user to provide input to the computational engine and to cause the computational engine to generate output.

103. Moreover, the "function" of the words in the 1-2-3 menus is to communicate. That is an end in itself and is not,

ordinarily, the type of functional activity to which the term "system" is applied.

104. If the term "system" *could* be applied to the communicative 1-2-3 menus and menu structure, by the same reasoning a textbook organized into related chapters would also constitute a "system" for learning a subject matter, or a poem consisting of integrated lines and stanzas could be described as a "system" for enlightenment or entertainment. In fact, I have used the example of a textbook to illustrate how humans deal with complex problem-solving by breaking the problem down into a hierarchy of sub-problems. This is the same sort of creative act required to design an effective menu structure.

105. Again, however, the classical systems characteristics (for example, "coupling" between subsystems—when the output of one subsystem serves as an input to another subsystem—and the use of shared resources) have no operational meaning in the design of menus.

106. In all events, I do not see how an attempt to apply the "system" label to the 1-2-3 menu structure assists the analysis here. I note that the definition of "computer program" in § 101 of the Copyright Act is "a set of statements or instructions to be used in a computer in order to bring about a certain result." This fits the definition of a "system" supplied by Borland's witnesses (and my own). Thus, as a matter of logic (and not of law), it seems to me that the definition of what is or is not a "system" cannot alone help to determine whether 1-2-3's menus and menu structure are legally protected, since any "computer program" as defined by the statute can validly be described as a "system".

107. Moreover, viewing the 1-2-3 menu commands and structure as a "system" implies no more with respect to the ability of other programmers to design spreadsheet programs with distinct menu commands or structures than it does (or did in *Paperback*) to describe them as forming a programming language.

108. If the 1-2-3 menu structure could be described as a "system", so could all menu structures, indeed all user interfaces, including those that use icons or other symbols in their menus. There could then be as many different "systems" in that sense as there could be alternative user interfaces, each defined by the program from which it arises: an Excel "system", a native Quattro Pro "system", etc. Describing menu structures as "systems" has no bearing on the potential variation in user interfaces or menu structures for spreadsheet programs providing comparable functionality.

109. Describing and studying user interfaces as "systems" seem immaterial to me for understanding their inherently communicative nature.

#### *The commercial value of the 1-2-3 menus and menu structure*

110. In my opinion, when 1-2-3 was first introduced, its user interface, including its menus and menu structure, contributed substantially to 1-2-3's success. I personally switched from VisiCalc to 1-2-3 at this time because of its enhanced features and its powerful and "friendly" interface, which was a major reason for my willingness to learn a new product.

111. The user interface of 1-2-3, like those of other successful microcomputer software products, has great commercial value.

112. The menus and menu structure of 1-2-3 are, beyond doubt, a critical component of its user interface and themselves have great commercial value. They are critical in forming the product's identity to the user.

113. Whether other words could have been chosen or another arrangement found for the 1-2-3 menus at the time of its development, without significantly affecting the degree of commercial success that the product achieved, is a question that cannot be answered empirically. But this is, in my opinion, an irrelevant question. Once users did learn the 1-2-3 menu commands and came to identify them with Lotus 1-2-3, those particular commands and their arrangement clearly



acquired great significance. Their *current* value, to both Lotus and Borland, lies precisely in the familiarity that millions of 1-2-3 users have acquired with them in the more than eight years subsequent to the product's introduction.

#### *Macros and macro compatibility*

114. In the *Paperback* case, the defendants posited a "requirement" of "macro compatibility" that, they argued, compelled them to duplicate the 1-2-3 menu structure. Defendants contended that "macro compatibility" was necessary in order to permit 1-2-3 users to retain the benefits of macros developed or purchased by them for use with 1-2-3 when switching to another spreadsheet product. Defendants also asserted that "macro compatibility" with 1-2-3 was necessary in order to sell a spreadsheet product.

115. Borland's witnesses here present a variation on this theme, apparently contending that it was necessary to duplicate the 1-2-3 menu structure not to execute macros written for use with 1-2-3, but to modify and/or to "debug" (*i.e.*, to fix errors in) them. (Dr. Liddle, ¶¶ 64-67; Prof. Olson, ¶¶ 47-50)

116. As I testified in *Paperback*, in my opinion the entire issue of how much "compatibility" one program should provide with another is, at bottom, a design decision based upon marketing concerns.

117. In the context here of achieving "compatibility" with one or more existing and competing products, the goal of such a decision is to reduce the transition costs to potential customers of switching to another product, in order to be able to persuade more potential customers to buy the new product.

118. There are various transition costs involved in switching from use of one product to another. The nature of these costs may vary from user to user.

119. Some users, who have stored quantities of data using the original program, would incur a transition cost if they had to re-enter on a keyboard those data to use with a new pro-

gram. A developer may therefore try to make it easier for such users to adopt the new program by eliminating that need.

120. The conventional method for doing so is to provide "file compatibility"—*i.e.*, the ability to read, interpret, and use data stored in the format of files created using another existing program.

121. By providing "file compatibility" with a significant number of existing formats, a developer can sufficiently overcome most user's concerns about transition costs so as to remove such concerns as an inhibiting factor on the user's purchasing decisions.

122. "Macro compatibility" between software programs is less frequently encountered. I understand it to mean the ability of one program to read and interpret "macros", or stored sequences of commands, created using another program.

123. "Macro compatibility" is different from file compatibility. A program can have the ability to read and interpret data, expressions, formulas, and certain attributes written in another program's file formats without having the ability to interpret that other program's macros.

124. The provision of "macro compatibility" is not a technical constraint inherent in the design of a spreadsheet program. Different spreadsheet programs can provide comparable functionality without providing any degree of "macro compatibility" with other programs.

125. Thus, "macro compatibility" itself reflects a design choice made for marketing reasons, presumably to lower the transition costs a user might incur if previously-stored macros would need to be rewritten for use with a new program product.

126. It is not necessary to duplicate the user interface or visible menu structure of another program in order to provide "macro compatibility".

127. The ability to read and interpret macros created using another program can in principle be achieved by a conversion

or translation program, whereby the symbols and syntax of the first program's macros are translated into a form that the second program can understand.

128. Conceptually, all macros could be translated or converted, but as the level of macro complexity increases the design complexity involved in achieving the conversion also grows. Eventually the point is reached where design trade-offs favor leaving some of the responsibility for the conversion to a human analyst.

129. Macro conversion programs can be both effective and practical for translation of a majority of macros, many of which are fairly simple. For example, Microsoft's Excel provides an effective utility for converting Lotus 1-2-3 macros.

130. From my observation and analysis of the Quattro and Quattro Pro "Menu Equivalent Commands"—to which both the "123-compatible" and so-called "native" menu trees in each product can be, and are, mapped—it appears that each of the Borland products already contains the internal programming routines necessary for such a translation or conversion. Indeed, when the user of the "123-compatible" menu trees in each product records a macro in "logical" (*i.e.*, Menu Equivalent Command) mode, as opposed to "keystroke" (*i.e.*, 1-2-3 menu tree) mode, such a translation or conversion process must occur.

131. Moreover, Quattro Pro Versions 2.0 and 3.0 contain a feature in their "native" modes called the "Tools/Macro/Key Reader" command, which permits the user to set the program to execute 1-2-3 macros *without* displaying or invoking the "123-compatible" menu tree. This feature simultaneously demonstrates that it was unnecessary for Borland to display the "123-compatible" menu trees in order to provide macro compatibility with 1-2-3, and confirms that the Quattro Pro product contains the internal routines necessary to achieve translation or conversion.

132. In my opinion, the majority of spreadsheet program users do not write macros extensively, if at all. Such users would be relatively indifferent to "macro compatibility".

133. Even those users who do employ macros are likely to be satisfied by the provision of a conversion program such as Excel's that would enable them to transfer most, but not all, previously-created macros to the new program.

134. The ability of users to modify or debug macros written in one program with a second program, in my view, presents an even more remote and theoretical concern on the spectrum of compatibility.

135. If a program contained an effective conversion or translation facility for macros created using another program, that same facility could also effectively provide for the display of menus, dialogue boxes, or other information necessary to modify or debug the converted macros, and could do so using the unique menu structure of that program. Once the translation has been made, the macro has been effectively converted to the new debugging environment (including any debugging facilities included in the new environment).

136. Certain "interactive" macros are written in a manner that causes the macro to pause in its execution in order to allow the user to make a selection from a menu. After that selection is made, the macro resumes execution. A converted macro could, in that situation, cause the program to display the appropriate menu from the unique menu structure of the second program. The technical difficulty in doing so would not be significantly greater than the difficulty in devising the translation facility itself.

137. Of course, the user who is familiar with the menu structure of the first program would need to learn the unique menu commands of the second in order to make the appropriate selection. That is a cognitive problem for the user, not a technical constraint of programming. Any difficulty the user might encounter in that situation is no different from the difficulty he or she would have in learning the second program's



unique menu structure to begin with. Because a user is unlikely to encounter such an "interactive" macro in the second program before being exposed to that program's menu structure itself, in my opinion this issue is entirely subsumed in the more fundamental issue of whether it is relevant to consider the user's potential difficulty in learning a new menu structure in this context at all.

138. Moreover, in my opinion, the ability to debug or modify converted macros by reference to the menu commands of the first program would have very little significance to the vast majority of spreadsheet users.

139. To the extent that macros written by one user are frequently shared in a corporate environment, as Borland's witnesses assert in their declarations (Dr. Liddle, ¶ 61; Prof. Olson, ¶ 44), that "one user" is typically an experienced in-house programmer or member of the department's technical support staff who would also possess the skills and motivation necessary to address any problem in modification or "debugging" that the translation or conversion facility did not automatically solve.

*The "123-compatible" menu trees of Quattro and Quattro Pro*

140. I am familiar with the so-called "123-compatible" menu trees or "emulation" modes of Quattro, Version 1.01, and Quattro Pro, Versions 1.0, 2.0 and 3.0, having reviewed each program in operation and having reviewed their documents. I have also reviewed the exhibits attached to the Declaration of Laurie Flesher, which were submitted by Borland in this case.

141. In my opinion, the menu commands and structure of each "123-compatible" menu tree are substantially similar in their communicative nature to the menu commands and structure of Lotus 1-2-3, Releases 2.0 and 2.01.

142. From my review, it appears that every item from the 1-2-3 menus is contained in the Quattro and Quattro Pro "123-compatible" menu trees, and appears in the same menu,

menu level and internal order within each menu. The only exception I can find is that the command "Quit", which (when it is used) typically appears as the last item in a menu, occasionally follows the insertion of new menu items in certain menus in the "123-compatible" menu trees.

143. Every "path" or command sequence through the 1-2-3 menu tree is duplicated in the Quattro and Quattro Pro "123-compatible" menu trees.

144. Each of the menu commands from 1-2-3 is not only represented in the "123-compatible" menu trees by the same word, but also represents comparable functionality in the underlying program.

145. In my opinion, there can be no doubt that the "123-compatible" menu trees are based upon Lotus 1-2-3, or that users would so perceive them.

146. Indeed, the "123-compatible" menu trees are designed in such a way that the points of similarity are explicitly identified to the user. The "new" commands in Quattro and Quattro Pro—that is, those commands which are *not* from 1-2-3—are (with trivial exceptions) clearly marked by a "bullet" or shaded-in square following the word in the menu, as the documentation for the products explains.

147. In addition, for all menus in Quattro Pro other than the main menu, the commands not from 1-2-3 are separated from the 1-2-3 commands by a horizontal line across the menu box (with the occasional exception of a terminal "Quit" command). (The main menu, unlike other menus, is displayed horizontally across the top of the screen as in 1-2-3, and thus no such line could be shown to separate its single new command and terminal "Quit".)

148. The numerical count of menu commands recited in each declaration of Borland's witnesses (Prof. Kieras, ¶¶ 66 & 77; Dr. Liddle, ¶¶ 84 & 95; Prof. Olson, ¶¶ 67 & 78) vastly overstates the differences between the "123-compatible" menu trees and 1-2-3 itself. In Quattro Pro Version 1.0, for example, more than 80% of the "thousands" of "new"

commands are contained in six identifiable "clusters" of the menu tree, below the "Worksheet/Global/Default/Hardware", "Range/Output Style/Fonts", "Graph/Options/Legend/Typeface", "Graph/Options/Titles/Typeface", "Graph/Options/Data-Labels/Typeface", and "Graph/Options/Range Customize" commands.

149. The first cluster, of more than 1700 commands, merely specifies screen and printer information. The next four clusters, of more than 1600 commands, serve only to set typefaces for various types of output display. The last cluster, of more than 600 commands, allows the user to alter the colors and shadings in graphs.

150. Moreover, with one exception these clusters diverge from the 1-2-3 menu tree at the third or fourth level of the "123-compatible" menu tree, with the majority of the "new" commands appearing from five to eight (or more) levels deep in the menu tree. Approximately 90% of the total of "new" menu commands in Quattro Pro Version 1.0 appear at least five levels deep in the "123-compatible" menu tree. Furthermore, a great many of these "new" menu commands are merely repetitious commands used in other "branches" of the menu tree.

151. Thus, the integrity and structure of the 1-2-3 menu tree is, so far as possible, preserved intact in the "123-compatible" menu trees of Quattro and Quattro Pro. The 1-2-3 menu commands are not "interspersed at all levels" of the "123-compatible" menu trees, as Borland's witnesses state in their declarations. (Prof. Kieras, ¶ 66; Dr. Liddle, ¶ 84; Prof. Olson, ¶ 67) Rather, the "new" commands in Quattro and Quattro Pro are new leaves hung on the old 1-2-3 branches and stems, which are in turn clearly distinguished for the user.

152. I do not see how Dr. Liddle or Prof. Olson can reconcile the statements in their declarations (at ¶ 87 and ¶ 70, respectively) that the "new commands" are "not merely extra choices that have been tacked on to the Lotus 1-2-3 menu tree", with their subsequent statements (at ¶ 99 and ¶ 84, respectively) that the new "functionality does not really fit

well within any of the Lotus 1-2-3 top level menu categories" but "had for the most part to be placed somewhere within the existing Lotus 1-2-3 top level menus." A fair reading of the assertions in their declarations concerning the "awkward" nature of the "123-compatible" menu trees (Dr. Liddle, ¶¶ 96-103; Prof. Olson, ¶¶ 81-88) is that they are "awkward" precisely because the new commands had to be, and were, "tacked onto" the 1-2-3 menus.

153. The users' exposure to the "123-compatible" menu trees will be concentrated primarily on the top levels of the menu hierarchy, where the differences with Lotus 1-2-3 are not significant. Because users will, as a matter of probability and likely patterns of usage, encounter the top levels far more frequently than lower levels, the top levels will also form the users' impression of the menu tree.

154. Indeed, the six clusters of the "123-compatible" menu tree of Quattro Pro Version 1.0 in which the vast majority of the "differences" with Lotus 1-2-3 are concentrated provide only limited functionality that many, and in some instances most, users will rarely invoke. For example, printer specification commands are likely to be among the least frequently used in the entire menu tree, since most users change their printers very rarely, if at all. Often these choices are made by technical support personnel at the time the software is installed.

155. In addition, Borland's comparisons exclude the "Install" and "PrintGraph" modules of Lotus 1-2-3 from their analysis. These modules provide functionality comparable to much of that provided by the "new" commands in Quattro and Quattro Pro. They are included in the 1-2-3 program disk, are accessible from the 1-2-3 "Access" menu, and have their own menus.

156. The emphasis that each of Borland's experts place in their declarations on the "View", "Window" and "Display" commands in the "123-compatible" menu tree of Quattro Pro (Prof. Kieras, ¶¶ 70-72; Dr. Liddle ¶¶ 88-90; Prof. Olson, ¶¶ 71-73) is, in my view, extraneous. Neither the "View" nor



"Window" commands alters the contents or display of other menus, and the "Display" command alters the display only of one submenu concerning graph types.

157. I believe that the "difference" in "problem solving approach" each of Borland's witnesses purport to divine from the long prompts in 1-2-3 and Quattro Pro Version 1.0, and which they elaborate upon in their declarations (Prof. Kieras, ¶¶ 57-61; Dr. Liddle, ¶¶ 75-79; Prof. Olson, ¶¶ 58-62), is nonexistent. Contrary to the assertion that Lotus 1-2-3 "usually" or "often" displays in its long prompts the next submenu that will appear if the user invokes the currently highlighted command (Prof. Kieras, ¶¶ 57-58; Prof. Olson, ¶ 59), the Lotus 1-2-3 long prompts do so in fewer than ten instances. Four of those instances occur in the top level or main menu.

158. I also fail to discern, in the vast majority of instances, any significant difference in the contents or message of the long prompts in the respective programs. In my view, the Quattro Pro long prompts for 1-2-3 commands, even where the wording is somewhat different, are mostly paraphrases of the 1-2-3 long prompts. This is not surprising, since the purpose of both sets of long prompts is to describe identical commands representing the same associated functionality.

159. Moreover, differences such as that between a display of the submenu branching from the "Worksheet" menu choice in 1-2-3, and the long prompt "Commands that effect [sic] the entire worksheet" in Quattro Pro, are too slight to sustain the weight of a "difference" in an entire "problem solving approach".

160. Similarly, I cannot see that the on-screen display of prior menu choices in the "cascading" menu boxes of Quattro Pro, which occurs to some extent but not always (at times all but the first letter of a prior choice, and occasionally even that, is obscured by a subsequent menu box), evinces a different "problem solving approach".

161. It may be helpful to users to see information concerning prior menu choices because it enables them to keep

track of their context in the menu tree. (At the same time, since the previous long prompts are not displayed, this point further demonstrates that the menus themselves provide valuable information to users.)

162. However, the more important purpose of the menu tree is to point the user to the appropriate *next* selection. The display of prior choices does not materially assist the user in making that selection.

163. In all events, I cannot tell from where Borland's witnesses gleaned the idea that the contents of the long prompts reflected a significant element in 1-2-3's design. Mr. Kapor's only statement on the issue in his first declaration in the *Paperback* case (at ¶ 101) is that he applied no "mechanical principle" in this regard, but made decisions "by a case-by-case consideration as to which type of long prompt would be appropriate to a particular command."

164. In my opinion, the approach to operations associated with the construction and manipulation of spreadsheets, databases, and related graphs presented to the user by the Lotus 1-2-3 menu commands and structure, and by the "123-compatible" modes of Quattro and Quattro Pro, are essentially identical. The differences—such as they are—between the menu trees do not affect this result.

165. In forming my opinions concerning the "123-compatible" menu trees of Quattro and Quattro Pro, I have taken into account and recognize the differences in the visual manner of their display. These center upon the use of "pop-up" and "cascading" menus in Quattro and Quattro Pro, respectively, the use of color, and the display of the long prompts in a separate location on the screen. Some of these differences may be useful, others not.

166. I have also taken into account the fact that Quattro Pro permits the invocation of menu commands by use of an external "mouse" device, in addition to the keyboard.

167. These differences do not, however, affect either the contents of the menus or their communicative nature. They

will not confuse 1-2-3 users or diminish their ability to apply their familiarity with the 1-2-3 menu commands to the "123-compatible" menu trees.

168. To the contrary, the "new" commands in the "123-compatible" menu trees have been interpolated in a manner that will (and was apparently intended to) minimize the interference with what 1-2-3 users already know. Once 1-2-3 users have learned how to install the "123-compatible" menu trees (or to load the program to cause them to be displayed, by typing "Q123" at the DOS prompt), they need to learn nothing new to set immediately to work and can apply all their acquired familiarity with 1-2-3 to Quattro and Quattro Pro. They can then, also, learn the "new" commands associated with such additional functionality as the Borland products do provide through an incremental process.

169. In my opinion, in providing the "123-compatible" menu trees, Borland obtained a tremendous commercial advantage by lowering the perceived "transition costs" to 1-2-3 users in switching to its products. Borland was thereby able to exploit the commercial success of 1-2-3 for its own marketing ends.

#### *Consequences of menu protection*

170. I do not consider it my place as an expert witness to make policy arguments or to render opinions on the law, such as those advanced in their declarations by Prof. Kieras (at ¶¶ 78-82) or Dr. Liddle (at ¶¶ 108-113). I was not asked to do so in *Paperback*, and did not.

171. If the Court should entertain opinion testimony in this case, however, concerning the likely consequences to software development or the software industry of providing protection to menu structures such as that in Lotus 1-2-3, or to user interfaces generally, my views are as follows.

172. The "efficiency" arguments in opposition to such protection asserted in the declarations of Prof. Kieras (at ¶¶ 81-82) and Dr. Liddle (at ¶ 111) extend, in this case, only to the

short-run gains to Borland or to users who switch from Lotus 1-2-3 to Borland products. There might well be short-run economies to users in lowering "transition costs", and to Borland (or others) in avoiding much of the cost in developing a truly original user interface, if Borland (or others) were allowed to duplicate the 1-2-3 menu structure. Indeed, that conclusion follows from several points in my previous analysis, and was apparently the basis for Borland's copying of the 1-2-3 user interface.

173. However, a more thorough and long-run efficiency analysis would have to consider the systemic loss from the perpetuation of *inefficiencies* resulting from "design flaws" in the 1-2-3 menu structure—possibly including those Prof. Olson claims to discern in her declaration (at ¶ 80)—and also the loss from the slower adoption of superior and more efficient menu structures—such as, according to Prof. Olson in her declaration (at ¶ 89), the "native" menu tree of Quattro Pro. Prof. Olson suggests this very point in the article I previously cited (at pp. 258-259).

174. Also, if it is true, as Dr. Liddle in his declaration (at ¶ 96) and Prof. Olson in hers (at ¶ 81) contend, that the "123-compatible" menu trees are "awkward, difficult and inefficient" with the inclusion of the additional functionality provided by Quattro Pro, as the capabilities of software continue to expand the implication is that little benefit can be expected in the future from similar attempts to superimpose or "shoehorn" those capabilities onto older structures designed for different products.

175. More important, though, is the long-run effect on incentives to software developers to invest in research and development. If menu structures and user interfaces could be freely copied or emulated, the benefits to their creators would be very short-lived. Significant expenditures in product development and user interface design would become much less rewarding. Continuing advances in programming tools and techniques are likely to decrease the benefits from such investment still further. Prof. Kieras, who proudly claims in



his declaration (at ¶ 48) to have "spent a great deal of [his] professional energies" trying to persuade software developers to devote more effort to user interface design, would find it even more difficult to persuade developers of the utility of his studies and theories.

176. The commercial advantage would then lie with those with the most money to spend on marketing, or to those with the most efficient code production. This would favor the large company over the prototypical start-up, and highly-efficient programming houses such as Japanese computer companies over domestic developers.

177. In my opinion, the user interface of software is what provides the critical value in the contemporary software marketplace. It is also one aspect of software development in which United States developers appear to hold a competitive edge. If it is public policy to provide meaningful protection for innovations in software products under United States law, it is imperative that user interfaces should be protected, including their menu structures.

Executed under the penalty of perjury at New York, New York on November 1, 1991.

/s/ JAMES C. EMERY  
James C. Emery

#### CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing was served on counsel of record for the defendant herein by telecopier and overnight air courier on November 1, 1991.

/s/ [ILLEGIBLE]  
Illegible

#### UNITED STATES DISTRICT COURT DISTRICT OF MASSACHUSETTS

Civil Action No. 87-0076-K  
Civil Action No. 87-0074-K

LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

—against—

PAPERBACK SOFTWARE INTERNATIONAL  
and STEPHENSON SOFTWARE, LTD.,

*Defendants.*

And Consolidated *Mosaic* Action.

#### DECLARATION OF BERNARD A. GALLER

I, Bernard A. Galler, declare:

1. I am Professor of Electrical Engineering and Computer Science and Associate Director of the Computing Center at the University of Michigan. A true copy of my resume and bibliography of my publications is annexed hereto as Exhibit A. I make this declaration as my testimony in the Phase I trial to be held in the two above-referenced actions.

2. I consider myself professionally knowledgeable in the subjects of computer software design and development.

3. For the past 34 years, I have regularly taught both undergraduate and postgraduate courses at the University of Michigan, including Advanced System Programming, the most advanced computer programming course offered in the University.

4. Under my direction and supervision, students in that course have undertaken and completed various practical projects in software design and development. These projects have included the design and development of (i) a program for the student course registration system at the University of Michigan; (ii) prototype software for a console for the Ann Arbor, Michigan, dial-a-ride bus system, in which bus schedules are coordinated by computer; (iii) a computer language to express degree requirements for the University of Michigan; and (iv) a compiler program for the purpose of converting programs written in the computer language BASIC into a form that can be executed by a mainframe computer.

5. I have personally designed and written hundreds of computer software programs for mainframe and personal computers, including compilers, operating systems and various applications.

6. In addition, I have published two books and a number of articles in the areas of computer programming and mathematics, as detailed in Exhibit A.

#### *Microcomputers and their characteristics*

7. On the most fundamental level, computers are simply machines with the ability to perform three basic functions, all electronically. They can (i) perform arithmetic calculations; (ii) perform logical operations, such as comparing values to determine whether one is larger or smaller than another and decide what to do next based on the result; and (iii) store and/or display the results, either internally or externally.

8. Although computers have only these few capabilities, they are useful tools for solving problems for the following

reasons. First, by combining "bits" (binary digits, the basic units of information manipulated by a computer), it is possible to represent any information in a form which a computer can process. Second, computers can perform millions of operations in a single second. Thus, they can be used to solve problems too complex to solve manually, as well as to perform tasks that would be repetitious and boring if performed by human labor.

9. Therefore, computers commonly are used to accomplish a wide variety of tasks in business, industry, education, science and technology, frequently involving office functions such as word processing and the generation of financial reports; the control of machinery; the solution of complex computational problems; and the recording and storage of large amounts of information.

10. "Microcomputers", or "personal computers" as they often are called, like their larger counterparts, mainframes and minicomputers, typically have several main parts: first, one or more input devices, to enable the user to communicate data and instructions to the computer; second, a central processing unit, which contains the electrical circuits that control the computer and actually perform the arithmetic and logical functions involved in processing data; third, a main memory, sometimes called "random access memory", to store the data being processed and the instructions employed to process the data; and fourth, one or more output devices, to permit results to be communicated back to the user.

11. Input and output devices sometimes are referred to as "peripherals". Examples of input devices are keyboards, "mouse" devices (which permit the user, without using the keyboard, to move the cursor on the computer screen and to convey instructions to the computer), modems (which receive information telephonically) and optical scanners (which read pages of text). Examples of output devices are video monitors and displays, text printers and graphics plotters.



12. Also among the peripherals are storage devices of varying capacities which employ magnetic media, such as internal and external hard disks, floppy disks and magnetic tapes. These are used to store computer programs and data which the computer is not using at a given time.

#### *Computer software and the user interface*

13. To perform any task, a computer must be given instructions. The instructions that a computer can execute consist of code, which the user normally does not see when operating a software program.

14. The code causes the computer to generate the "user interface" according to the software developer's conception and design. In microcomputer software, the user interface typically is displayed on the screen of a video monitor.

15. The "user interface" comprises the way in which the program interacts with the user. Typically, the user interface provides information necessary for the user to communicate with the computer and to instruct the computer to perform particular tasks, within the range of functionality that the software is designed to provide.

16. The user interface may also express to the user a model or approach to the general subject the software addresses, which will help the user to understand the subject and guide the user in solving a specific problem at hand.

17. Computer software traditionally has been divided into "operating systems" and "applications software".

18. "Operating systems" or "systems software" are programs that instruct the computer how to get data and other instructions into, through and out of the computer. Examples of operating systems for microcomputers are DOS, XENIX and OS/2.

19. "Applications software" consists of programs which permit the user to perform specific tasks or "applications".

Commercially available applications software packages for personal computers can be used to perform a wide variety of functions, including word processing (electronic assembly, storage, and editing of texts); database management (storage and manipulation of data according to different specified categories); spreadsheet calculation (calculation and manipulation of data involved in financial analysis, modeling and accounting); graphics (pictorial display and creation of graphs and charts); printing and desktop publishing (arrangement, display and printing of text and graphics in different type-faces and formats); accounting (record-keeping for businesses); communications and electronic mail (transfer of information between different computers); software utilities (organization of magnetic disk storage media and diagnosis and repair of commonly-encountered disk-related problems); education and games.

20. These general categories frequently can overlap, as in integrated software which performs various common business functions, often including word processing, spreadsheet calculation, business graphics, database management and communications. In an integrated product, the same data files are transferable among the various components without requiring the user to reinput the data.

#### *The software development process*

21. Software development is a creative process, in which imaginativeness and inventiveness are at a premium.

22. From the outset of the development process, developers must make numerous crucial choices frequently involving subjective judgments.

23. The design and development of original applications software can be difficult, expensive, time-consuming and error-prone.

24. The software development process consists generally of requirements analysis and functional specification; systems

design; coding; debugging and documenting; testing and certifying; and preparing final documentation.

25. In practice, these activities are not necessarily pursued in chronologically distinct or sequential phases. It is common for several activities to occur simultaneously, and for the entire process to be repeated a number of times.

26. What the user sees when the completed software product is run on a computer is the "tip of the iceberg" and does not reveal the magnitude of the preceding development process.

27. Successful software development ordinarily involves various approaches that are tried and discarded when they do not work out as anticipated or hoped. The user of the finished software cannot tell how much time and effort was spent in the pursuit of these "blind alleys" during the development process.

#### *Requirements analysis and functional specification*

28. Following proper development procedure, the applications software developer first should analyze exactly what the software is to do and the tasks it must be able to perform. In other words, the developer should select the range of functionality which the application will provide. Once this is determined, a developer typically will write a functional specification for the program describing the intended functionality.

29. As part of the functional specification, the developer should begin to define the software's "externals", that is, the manner in which the program will provide choices, assistance and ultimately output to the user, the general nature and appearance of the program's communications to the user, and the manner in which the program is to receive instructions and data input from the user.

30. As part of defining the software's externals, the developer should create a "mental model", or conception of the program's behavior, which the user is intended to form in operating the program based upon the user's perception of the user interface and externals. This model, along with the communicative content of the program's externals, will later find expression in the detailed creation of the program's user interface.

#### *Systems design*

31. The developer should determine how the program is to be organized, comporting with the "mental model" of the application, and should decide which steps in the application typically should precede others. This often is done by constructing a flow chart.

32. The developer should also decide which parts of the program have to interact with which other parts, how much the parts should know about each other and which errors the program should be able to recognize and resolve.

33. The developer should also establish the program's technical parameters, including the optimum size of the program's code, how much of the computer's storage and memory should be allocated to store data at different times, and how fast the program should be able to run.

34. For programs which are intended to permit the performance of many interrelated tasks, the management of large amounts of data or the control of several devices, the problems of design are increased greatly. As a program grows in the scope of its intended functionality, technical problems concerning the interaction of its different parts become more difficult. As more people become involved in the development process, problems of coordination and management also tend to grow.



*Coding*

35. The developers should then write the detailed source code, *i.e.*, the instructions which, when compiled into object code, can be executed by the computer.

36. Typically, the more detailed the functional specification and design documentation, the less significant the task of coding becomes.

37. Generally, coding should not consume more than one-fifth or one-sixth of the total time spent in implementing a new program.

38. There is a growing trend in software development toward automated coding, as exemplified by "compiler compilers" and "report generators", that is, programs which themselves will generate other programs.

39. Based on my experience with the software development process, it is my opinion that implementation of a good design by coding is the "tail of the dog". That is, it is less difficult and requires less creativity and imagination than developing the design in the first place.

*Testing, debugging and documentation*

40. The developers must also test and debug (that is, remove errors from) the program, and write its final documentation, including both technical notes indicating how the various parts of the program operate and any manual or instructional materials for intended users.

*The importance of design in software development*

41. For several years, I have successfully used the following rule of thumb for scheduling time and allocating effort in the development of new software: twice the amount of time and effort is typically required for planning, requirements analysis, development of a functional specification and

detailed systems design, including definition of the user interface, than is required for coding the program.

42. This allocation accords generally with the widely accepted model of the "Software Life Cycle" developed and verified empirically by B.W. Boehm, which separates the development of computer systems into six distinct phases: (i) requirements analysis; (ii) system design; (iii) detailed design; (iv) coding; (v) integration; and (vi) operation and maintenance.

43. This model provides a general principle for new software development that is not specific to any particular type of system and applies equally well to the development of micro-computer applications software as to large-scale systems software.

44. Both the allocation which I generally employ and the model of the Software Life Cycle show that specification and design, including the definition of the user interface, is typically the largest component in new software development in terms of the number of man-hours of labor required.

45. Moreover, it is typical in new software development for the more talented and creative members of the development team to be involved through the completion of specification and design, and for those persons then to pass on the responsibility for coding to the less experienced or skilled.

46. Thus, specification and design in the development of new software is typically far more significant than coding, both in the quantity and quality of resources devoted to it.

47. Errors made during specification and design are, among errors made in the development process, the most costly to repair.

48. However, no matter how successfully the software developer addresses the complexities of the development process, and no matter how well-constructed and technically proficient the program's internal workings may be, the micro-

computer applications developer cannot forget that the end result is typically intended for an audience of eventual users who will likely be less concerned than the developer about such matters.

49. The users' perception of the reliability, speed and efficiency of the program undoubtedly influences their view as to the value of the software. However, the users may not even begin to reach these considerations if they do not first perceive the software as providing effective solutions to their particular problems. Users typically form such a perception based upon whether the software appears to them to be well-designed and reasonably easy to learn and to use.

50. Therefore, in my courses, I teach that the central unifying activity of software development is the determination of the actual needs of the intended users. The goal of satisfying those needs with clear, practical and effective solutions should guide the developer's decisions throughout the creation of the software's functional specification and detailed design, including the definition of the user interface.

#### *The importance of the user interface and its creation*

51. Within software specification and design, expression of the user interface is probably the most critical task the application developer faces and that in which the most significant creative activity and effort is expended.

52. The user interface should create the "mental model" in the user's mind that organizes the user's way of thinking about the application or problem addressed by the software.

53. The user interface also conveys the program's direct communications to the user concerning operation of the software, including information communicated specifically to assist and instruct the user—in short, those elements which are most intrinsically expressive and most likely to determine how "friendly" or valuable the user will perceive the software to be.

54. Accordingly, clarity, simplicity and precision are at a premium in creating a successful user interface.

55. Creation of the user interface requires the software developer to make subjective choices, decisions and judgments.

56. Initially, the developer must choose the extent to which the user or the software will determine and control the progress of the program.

57. Various possibilities exist. They can be visualized on a continuum ranging from a user interface in which the program's progress is controlled entirely by the user at one end, to a user interface in which the program's progress is controlled entirely by the program at the other.

58. The greater the amount of control that can be exercised by the user, the more likely the software will be to meet the user's individual needs. Conversely, the greater the control exercised by the program, the less flexible the software will be from the user's perspective.

59. Closest to control by the user are "command-driven" user interfaces, in which the progress of the program is determined by commands chosen by the user and communicated to the program in a vocabulary and syntax which the program will recognize.

60. A "command" in this context is a symbolic representation of a particular instruction or set of instructions to the computer, which the program is designed to interpret. It is not, typically, an instruction to the computer itself.

61. If the developer chooses to employ a command-driven user interface, he or she still must choose the range of commands which the program will recognize. For example, will the program recognize a wide range of commands in an extensive vocabulary and a flexible syntax, or a limited range of commands in a limited vocabulary according to a rigidly-defined syntax, or something in between?



62. Providing a greater degree of control by the program are "menu-driven" user interfaces, in which the progress of the program is determined by the user's selection from among predetermined arrays of choices, *i.e.*, "menus", presented to the user by the computer.

63. Even closer to control by the program are user interfaces in a question and answer format, in which the progress of the program proceeds according to the user's selection of answers to multiple-choice questions presented to the user. Such a format is better suited to applications intended to provide only a few possible variations than to applications intended to permit the user to perform complex tasks requiring a higher degree of flexibility.

64. It is even possible to design a user interface in which the program itself guides the program's progress from step to step, with the user making choices no more significant than striking a key to send the computer to the next step of a predetermined sequence of tasks (for example, a tutorial program).

65. If the developer determines that the progress of the program should be controlled to a large extent by the user, the critical decision at this point is likely to be whether or not to utilize "menus".

66. One disadvantage of a decision to employ a command-driven user interface instead of a menu-driven one is that the user must become familiar with and frequently memorize the vocabulary and syntax of the possible commands which the program will recognize. With a menu-driven user interface, because the computer will display to the user the options available at any given point in the software's operation, memorization of commands or of their permissible sequences is unnecessary.

67. Another advantage to the use of menus is that they can be organized in a structure that will convey to the user the approach or "mental model" to the application the developer has conceived.

68. If the choice is to provide menus, the developer must choose how the commands contained in those menus will be represented on the screen. There is a wide range of possible choices, including words, abbreviations, letters, icons (pictures) and other symbols.

69. The developer must also choose the manner in which the user will communicate menu selections to the program. Various possibilities exist, including: (i) use of the computer's cursor movement keys to identify an icon or word, and selection by use of the "Enter" key; (ii) "pointing" to the textual command or icon with a mouse device and "clicking" the mouse to make a selection; and (iii) typing one or more keys on the attached computer keyboard.

70. If the developer decides that the user will select commands from menus by typing a key or keys on the keyboard, the developer has several possibilities for implementing that choice, including: (i) one or more letters corresponding to the desired command, which could be either the first letter of the word or some other designated letter or letters, indicated to the user by a method such as capitalizing, underlining or highlighting; (ii) a "function key" from among the ten or twelve function keys (F1 through F10 or F12) commonly found on personal computer keyboards; or (iii) some combination of these and other means.

71. The developer must also determine the organization of the menus. Again, there are numerous possible variations. The developer should choose that organization which not only best conveys to the user the developer's approach to the application as a whole, but also assists the user in selecting the commands necessary to accomplish specific tasks.

72. For example, if the number of command options to be made available to the user are few, and the task to be addressed by the application is straightforward, the developer may choose to provide the user with the ability to view all basic command options at once, in a so-called "single-tier" menu.

73. Alternatively, there may be so many options, or the tasks to be performed may be sufficiently complex and varied, that the developer may decide that the options should be presented to the user in a "hierarchical" structure.

74. A "hierarchical" menu structure breaks down and organizes the universe of possible command options into groups of related choices in sequence. Each group of related choices is typically communicated to the user by display of a discrete "menu screen".

75. In a hierarchical menu structure, many or most command options are dependent upon others, *i.e.*, they become available only upon the user's selection of particular commands at previous stages in the sequence. A hierarchical menu structure can be visualized as a "command tree" or "menu tree", with dependent commands "branching" from commands at prior levels.

76. In organizing a hierarchical menu structure, the developer must decide the number of command choices to be presented to the user at each menu level, as well as the number (or "depth") of menu levels. Again, there are various possibilities. For example, the menu tree could be "broad and shallow", with many choices presented at once but with only a few levels. Alternatively, the menu tree could be "narrow and deep", with few choices presented at once but utilizing many levels, or something in between.

77. In determining menu levels, the developer should consider the particular sequences of command options that the menus will provide, thinking through all possible combinations and permutations. The developer must, at a minimum, choose the commands from which other groups of choices will branch, and select and arrange those which will branch from them.

78. There is no objectively "right" or "wrong" answer when organizing the menus for a particular application. The decisions are largely subjective.

79. The menu organization should reflect the developer's particular approach to fulfilling the software's intended purpose and functionality, and—as important—the developer's conception of how the likely users of the software will perceive the final result. The developer should seek to provide to the user in the menu structure an intelligent and hopefully intuitive guide to the program's capabilities.

80. Thus, choices concerning menu organization may be influenced by considerations such as the degree of sophistication of the intended user audience, as well as the anticipated frequency with which the users are expected to use the software. For example, users who have become familiar with the possible combinations might prefer a relatively few menu levels to expedite the decision process. Others might prefer to view just a few options at a time in each menu level, particularly when learning the application.

81. The developer could even decide to permit the user to choose from various possible organizations intended for different degrees of user sophistication, or to select an organization that the user could later change as desired.

82. The developer must also decide the manner in which the menus are to be presented to the user, a decision that will influence the user's perception of the software's ease of use. Once again, various possibilities exist, including the display of menus containing words on the computer screen; the display of commands on a template (typically, a small plastic card with printed words) to be placed on or next to the keyboard; and the display of symbols, letters or abbreviations on the screen, with explanatory references contained in the software's user's manual or other printed documentation.

83. Whether the developer decides to present command menus in a single-tier or hierarchical structure, the developer must decide, for each menu, how the menu should be internally arranged. Alphabetical and various substantively-ordered arrangements are possible. The choice of a particular



arrangement for each menu will depend on the developer's view of the relationship, if any, among the choices in each group and the most effective way to convey that relationship to the user.

84. The developer should also select the content of each individual menu choice, including the specific word, icon or other nomenclature to be used to represent that choice, which in the developer's view most clearly expresses and communicates to the user the meaning of the particular command or functionality the choice provides.

85. In sum, creating a user interface requires the developer to apply discerning judgment in choosing from among a wide variety of options, and to exercise significant creativity in expressing the software's model or approach to the particular application in a manner that will appear logical and easy to use.

86. A successful user interface will seem to the user to be naturally suited to the performance of the tasks for which the software is employed, rather than strange or intrusive.

87. The simplicity and ease of use of a successful user interface can sometimes make that interface seem "obvious" in retrospect, or ideally suited and even necessary to the functions the software performs. In reality, however, such a reaction more often reflects the skill, creativity and effort of the developer.

88. Indeed, the possible variations to user interfaces are limited only by the resourcefulness of developers and, in the case of commands which take the form of words, by the constraints of language.

89. Different software programs can provide the user with the same functionality, using the same computer, video screen and operating system, and yet employ user interfaces that the user will perceive as entirely distinct.

90. For example, a commercially-available software product called HyperCard, designed for use with the Apple Macintosh personal computer, permits the creation of "do-it-yourself" user interfaces. Using HyperCard, a user can create many different user interfaces, employing pictures, text, menus, consecutive screens, selection techniques, and other options, for applications designed by the user, including different user interfaces for applications providing exactly the same functionality.

### *"Cloning"*

91. As used in the context of computer software, a "clone" is a program that imitates another program, mimics its behavior and appears identical to it (or virtually so) in external respects, including the user interface.

92. A developer who produces a clone of an existing software product avoids many critical steps in the development process and many of the attendant risks and expenses.

93. For example, by cloning an existing product a developer can avoid almost all aspects of functional specification, much of the detailed design process, and almost all issues involved in creation of the user interface. In my opinion, the "developers" of a clone can bypass most of the creative and more difficult effort typically required in the development process.

94. The developer of a clone also has an easier task in preparing the final documentation for the product. Typically, documentation must undergo frequent changes and numerous iterations to keep pace with ongoing major and minor refinements to the program; the clone developer avoids this, since he knows exactly how the product will look and behave when finished.

95. Even the difficulties of coding and testing a clone can be reduced, because the programmers already know precisely what the clone program should be able to do, and can refer to

a detailed working model (furnished by the existing product) in case of doubt.

96. A reasonably skilled professional programmer can readily take an existing applications program with adequate documentation, run the program and observe its behavior and, using that as a model, clone the existing program.

97. Even good college students given a sophisticated application program such as Lotus 1-2-3, its documentation and an opportunity to observe its operation, could develop a program that mimics the appearance and most aspects of the behavior of the original.

98. Depending on the degree of skill and effort applied, the finished "clone" product might be more crude than the original in its code structure and of inferior quality in performance, that is, less efficient in its use of memory, slower in speed of operation and plagued by "bugs" (*i.e.*, errors).

99. Nonetheless, if one disregarded constraints of performance and simply set out to duplicate the external aspects of an existing software product (given adequate documentation and opportunity to observe its operation), cloning, as a programming task, is relatively easy to accomplish. Even if the clone developer seeks to make a product equal in performance to the existing product, the task is significantly easier than when creating new software.

#### *Electronic spreadsheet software*

100. I have examined numerous different electronic spreadsheet programs that are commercially available for use with microcomputers.

101. The basic purpose of spreadsheet software is to permit the user to collect and arrange large quantities of numerical, statistical or financial data, as well as to perform complex calculations with that data and to manipulate it to view and analyze scenarios based on different assumptions.

102. Spreadsheet software allows the user to represent and create electronically a spreadsheet that otherwise would have to be prepared manually, with handwritten entries and arithmetic or with a calculator.

103. The spreadsheet program causes the computer, according to the user's instructions, to perform all calculation and recalculation automatically, including the application of numerous mathematical, logical, financial and statistical formulas, expressions and functions chosen by the user.

#### *Lotus 1-2-3*

104. I am familiar with the operation of Lotus 1-2-3 ("1-2-3"), Releases 1A and 2.0. 1-2-3 is an integrated microcomputer software product providing spreadsheet, graphing and information management capabilities.

105. As will be demonstrated at trial, 1-2-3 employs a hierarchical menu structure to display, in full words of text combined in relatively short menus, the options available for the user to invoke in order to instruct the program to perform particular tasks or operations.

106. 1-2-3's menu structure, appearing to the user in sequences of variable menu screens, presents the user with a particular approach to, or model for, the solution of spreadsheet-related tasks and problems.

107. 1-2-3 employs a method of menu display commonly called the "two-line moving cursor menu". Each menu screen contains two lines. By use of the left and right arrow keys, the user can cause the cursor to move, highlighting different words in the upper, "menu" line.

108. Each time the cursor is moved to highlight a different word in the menu line, the program causes different information to be displayed in the lower line of the menu screen.

109. The 1-2-3 menu lines contain series of words, such as this from the "main", or first, menu: "Worksheet Range Copy



Move File Print Graph Data Quit". When a menu screen is first displayed, the word furthest to the left in the menu line is highlighted, *i.e.*, "Worksheet".

110. Each word in a menu line begins with a different letter and represents a different option then available for the user to invoke.

111. To select an option from a menu line in 1-2-3, the user can either (i) strike the key corresponding to the initial letter of the desired word, or (ii) highlight the desired word by use of the right and left arrow keys and then strike the "Enter" key.

112. The words in the menu lines correspond either to commands to instruct the program to take some action, or to options (such as "Global" or "Range") that primarily serve to introduce subsequent sets of logically-related commands pertaining to particular areas of the program's operation. For example, "Global" introduces a set of commands that can be used to set parameters for the spreadsheet (or "worksheet" in 1-2-3's terminology) "globally", or as a whole.

113. The words contained in 1-2-3's menus are not the only words that could be chosen to correspond to their respective commands or options. From my experience, in most instances there are many others that could sensibly be employed in their place. Moreover, the choice of word to represent a command or option in a menu line has no direct effect on the program's underlying functionality.

114. The lower lines of 1-2-3's menu screens display one of two kinds of information: (i) either a "submenu", *i.e.*, the next menu level or set of choices that will become available if the user selects the highlighted word from the current menu line; or (ii) an explanatory comment about the highlighted word in the menu line.

115. For an example of a submenu in the lower line of a menu screen, when the word "Worksheet" is highlighted in

1-2-3's main menu, the lower line displays the words "Global Insert Delete Column Erase Titles Window Status Page". These words will appear in the menu line of the next menu screen the program will display if the user, in fact, selects the "Worksheet" choice.

116. For an example of an explanatory comment in the second line, when the word "Copy" is highlighted in the main menu, the message "Copy a cell or range of cells" appears in the lower line.

117. In no instance does the lower line display commands or options currently available for the user to select. In my opinion, the purpose of the lower lines is solely to provide the user with information concerning the highlighted options in the menu lines, and to apprise the user of the consequences of their selection.

118. 1-2-3's two-line moving cursor menus and hierarchical menu structure effectively give 1-2-3's user interface an informative dimension like that of a thumbnail user's manual, especially for new or infrequent users. Adding to this effect, 1-2-3 also incorporates an on-line, context-sensitive "Help" facility from which the user may obtain basic instruction at almost any stage in the program's operation.

119. In my opinion, the 1-2-3 menus and menu structure clearly reflect their developers' approach to the solution of spreadsheet problems. They appear simple, natural and straightforward. Far from suggesting that they were therefore easy to create, this implies to me that the developers of 1-2-3 expended considerable effort, planning and creative thought.

120. However, 1-2-3's user interface is not the only way, and not necessarily even the best way, to articulate a model or approach for a spreadsheet program, even assuming a design decision to employ a menu-driven user interface.

*1-2-3's macro commands and function keys*

121. 1-2-3 macros, at their most basic, are abbreviations for user-defined series of keystrokes. Each macro represents a string of commands arranged in a particular order or syntax.

122. After recording and storing a macro, the user can later instruct the computer to perform the entire series of keystrokes by retrieving and "executing" the macro, *i.e.*, striking the key or keys which invoke the macro.

123. 1-2-3 also contains a set of commands listed in the 1-2-3 user manual and referred to as "/X" commands, which are used in the creation and execution of macros.

124. The set of commands to which the "/X" commands correspond is one set of possible choices from among many that could be used to perform comparable functions.

125. 1-2-3 also permits the user to communicate certain frequently-used commands to the program by use of the computer keyboard's special "function keys". For example, F1 corresponds to "Help", F2 to "Edit", and F5 to "Goto".

126. 1-2-3's selection of the functionality to assign to the function keys as a whole (as opposed, for example, to the menu commands); its selection of which commands to assign to different keys; and its selection of words or names to represent those commands, are not dictated by the computer hardware or by any other constraint. A spreadsheet need not use the function keys at all, much less assign to them any particular functionality, command or name.

*Alternatives to 1-2-3's user interface for a spreadsheet*

127. If a software developer were to undertake to create a user interface for a spreadsheet program that would be used for the same general purpose as Lotus 1-2-3 (*i.e.*, the construction and manipulation of spreadsheets), the ways in which such an interface could be expressed are essentially unlimited.

128. At the outset, there is no inherent reason why a spreadsheet program need include all of, or the same, functionality that Lotus 1-2-3 provides. While certain operations (such as, for example, the basic arithmetic operations) are probably integral to spreadsheet usage, a spreadsheet could provide the user with the ability to perform fewer, more or simply different operations than 1-2-3.

129. Moreover, there is no technical constraint compelling even a spreadsheet program providing the same functionality as 1-2-3 to do so by using the same set of commands for communications between the computer and the user.

130. And even if a developer intended to create a program that provided precisely the same functionality as 1-2-3, there is no inherent or technical reason requiring its user interface to resemble, much less approximate or duplicate, the appearance and expressive characteristics of 1-2-3.

131. To the contrary, it is currently a common and even preferred technique in software development to implement that portion of the source code which generates the user interface (the "presentation manager") separately from the underlying "computation platform", or core of the program which performs the basic operations and data processing. The purpose is specifically to permit the developer to replace or modify one with minimal effect upon the other, so that, for example, changes could be made to the program's internal workings without causing an apparent change in what the user perceives of the program.

132. At the same time, this technique makes it readily possible to erect an entirely different user interface, or more than one user interface, on the same underlying platform. The developer needs only to "map" commands from the new user interface, whatever they may be called and whatever the manner of their presentation to the user, to the appropriate functionality of the computation platform.



133. Thus, the possibilities for creating alternative user interfaces even for programs that provide the same functionality are virtually endless.

134. A spreadsheet program need not employ menus at all. It is possible to design a user interface for a spreadsheet program that does not employ menus.

135. Even if menus are employed, moreover, there is no inherent or technical reason for a developer to duplicate or imitate the 1-2-3 menu structure. It is possible, for example, to design a menu structure for a spreadsheet program that would present command options in only one or two menu levels, rather than the four or five 1-2-3 frequently presents.

136. Even with a menu structure of comparable depth, it is possible to design a structure very different from 1-2-3's. There is no technical reason for any given menu level to contain words or symbols representing the same command choices as those of 1-2-3, or for the dependent command choices in lower-level menus to branch from precisely the same commands or options as they do in 1-2-3's menus.

137. It is possible to design a menu structure in which different sets of commands would branch from different initial menu choices. For example, there is no requirement that a menu option which introduces the commands permitting the user to control worksheet-wide settings (comparable to the "Global" command in 1-2-3) be located in a second-level menu, rather than the main menu or any other. (Indeed, there is no requirement that there be such a command at all.)

138. Moreover, neither the particular order nor choice of words within 1-2-3's menus is dictated by any technical requirement of the operations performed when those commands are invoked. It is possible to design a user interface with menus of pictures or "icons" instead of words; letters; other words to represent each command; or abbreviations of words, such as "Univ" (for universal), "Tab" (for tabulate), "Info" (for information), "Tr" (for transpose), and so forth.

These could be arranged in any order without affecting functionality.

139. It is also possible to create a user interface with a way of invoking commands other than typing the first letter of the word corresponding to the command or by highlighting the preferred selection with cursor movement keys and striking the "Enter" key. Therefore, the potential universe of options is not confined to words with particular first letters, a fact which provides a developer with substantially greater flexibility.

140. There is no technical requirement that a spreadsheet program incorporate a means of communicating explanatory information about each menu choice to the user. But if a developer did decide to incorporate a means of communicating such information, it is certainly possible to design and incorporate a means of communication that would be different from the informational lower line of 1-2-3's menus.

141. For example, a program could display information about highlighted menu choices in a special box on the computer screen, or provide for the user to utilize one of the function keys to cause the computer to display explanatory information about menu choices if and when desired.

142. And, unless a developer set out to provide precisely the same functionality to the user, in precisely the same way, using a similar menu structure and explanations of equivalent length, there is no logical reason that the contents of whatever explanatory information the program provided should match that communicated in 1-2-3.

\* \* \*

Executed this 27th day of November 1989 at Ann Arbor, Michigan.

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Bernard A. Galler

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

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Civil Action No. 90-11662-K

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LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.,

*Defendant.*

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SECOND DECLARATION OF BERNARD A. GALLER

I, Bernard A. Galler, declare:

1. I submit this second declaration to supplement my prior declaration dated May 9, 1991, and in support of the Motion for Summary Judgment filed by Lotus Development Corporation ("Lotus") and in opposition to the Cross-Motion for Summary Judgment filed by defendant Borland International, Inc. ("Borland").

2. I have reviewed the Declarations of Professor David Kieras, Dr. David Liddle and Professor Judith Olson submitted on behalf of Borland. I have seen the transcripts of each of their depositions. I have also read a redacted version of the memorandum of law submitted by Borland.

*Credentials*

3. At the risk of injecting an overly personal note into these proceedings, I was surprised and distressed by the nature of

the attack on my credentials by my junior colleagues from the University of Michigan.

4. I know both Professors Olson and Kieras. I taught Professor Olson her first course in computer science while she was a graduate student here in the late 1960's.

5. While I certainly respect both as serious and hard-working scholars, I do not believe either is in a position to question my expertise. Neither is a computer scientist by training or qualification; their degrees are in psychology. Within the Electrical Engineering and Computer Science ("EECS") Department of which I am a member, both are perceived primarily as applied psychologists.

6. In fact, Professor Kieras has exaggerated the significance of his position within the EECS Department. He is *not* tenured in the EECS Department, contrary to what he states at Paragraph 7 of his Declaration. A request to grant him tenure in the EECS Department some years ago was not approved. The seat of his tenure is in the Program in Technical Communication of the College of Engineering, where he deals with technical writing, a distinct specialty for which he is as well or better known than for user interface study.

7. Similarly, contrary to the implication of Paragraph 1 of his Declaration, Professor Kieras is not "the" user interface specialist within the EECS Department, in the sense that the Department has not appointed or delegated him to cover that subject. He proposed to offer the user interface course he mentions at Paragraph 8 of his Declaration, which was not previously offered; it is an undergraduate course (open to enrollment by graduate students) and is not the only one in the department that addresses user interface issues. I cover such issues, for example, even in my introductory computer science courses.

8. Professor Kieras also mentions at Paragraph 10 of his Declaration that he serves on the dissertation committees of doctoral candidates "working on user interface issues". None



of his three current advisees, however, is a graduate student in computer science.

9. Moreover, I read nothing in the background of either Professor Kieras or Olson to suggest that either has any particular expertise in the development of commercial software products or indeed in microcomputer software development at all.

10. For example, the program Professor Kieras describes at Paragraphs 28 and 44-45 of his Declaration sounds like a batch processor for performing text string comparisons. From what he says in his deposition, its user interface was indeed "very minimal", consisting of one command to run and one command to exit the program. (Vol. 2, p. 333) (Copies of pages from Professor Kieras' deposition referred to herein are attached as Exhibit A.) A program of such limited utility is not much of a basis from which to extract generalizations concerning the role of user interface design in software development.

11. Professor Olson's depth of knowledge concerning computer programming and software development is called into question by two topics covered in her deposition. In one example, she stated her belief that all data sorting routines must involve some form of numerical calculation in their internal workings, based upon her experience in writing a small sorting program which translated letters into numbers and then compared the numbers to determine their order of precedence. (Vol. 2, pp. 55-56 & 82) (Copies of pages from Professor Olson's deposition referred to herein are attached as Exhibit B.) Her comments reflect little understanding of standard programming techniques involved in writing sorting routines, even those that would ordinarily be covered in an elementary programming course or a basic textbook.

12. Her description of the menu commands of Lotus 1-2-3 as a "system for performing numerical calculations" at Paragraph 28 of her Declaration is itself an indication that her understanding of spreadsheet software is incomplete. Quite simply, the menu commands do not perform numerical cal-

culations and, with rare exceptions, are not invoked to perform such calculations. As I was careful to state in my First Declaration in the *Paperback* case (the "*Paperback* Declaration") at Paragraphs 105-106, the menu commands address "spreadsheet-related" tasks or operations, such as the manipulation of data.

13. The other questionable example from Professor Olson's deposition is her conclusion, based upon an experiment in which she observed expert users work with 1-2-3, that the "File" commands are rarely or infrequently invoked. She apparently failed to consider that because the users in her experiment were not given data files with which to work, as would be typical in real usage, her conclusion might have been faulty. (Vol. 2, pp. 129-133)

14. The retrieval and storage of data in memory files is a fundamental computer operation, typically performed throughout a work session. For that very reason, the "File" command in many microcomputer products (such as Microsoft's Excel) is placed in the position in the top-level menu that Professor Olson's own "rules" of user interface design would reserve to the most frequently used command. I find it telling that Professor Olson's common sense did not cause her to question her conclusion that "File" commands are seldom used.

15. Lotus' proprietary research concerning command usage under actual work conditions, which I have reviewed, suggests that "File/Retrieve" is the second most frequently invoked command sequence in the Lotus 1-2-3 menus.

#### *The "Field" of Human-Computer Interaction*

16. Human-computer interaction ("HCI") or, as it is alternatively called, computer-human interaction ("CHI"), is a relatively new and broadly-defined interdisciplinary field. The Special Interest Group on CHI of the Association for Computing Machinery ("ACM"), for example, held its first conference in 1982; several journals in which its practitioners, such as Professors Kieras and Olson, publish have sprung up

since then. In contrast, the Special Interest Group on Programming Languages—of which I have been a member since its inception—has been active for more than 25 years.

17. Subsequent to reading the declarations of Borland's witnesses, I made a point to find out more about their background and their publications. I agree with many of the statements concerning the status of this field made by Professor Kieras in his article, "An Overview of Human-Computer Interaction", published in the *Journal of the Washington Academy of Sciences* (June 1990), Vol. 80, No. 2, pp. 39-70 ("Overview of HCI").

18. As he writes, computer science generally does *not* include HCI (*id.* at 42):

"[C]ourses in HCI or user interface design are not common in computer science departments. Where they do exist, they tend to be viewed with some skepticism . . . . The field of HCI generally has a problem in that it has not established its credibility as a technical discipline with mainstream computer science." (*Id.* at 43)

19. I am a computer scientist. I have never pretended to be a psychologist, "cognitive scientist" or an "expert" in HCI techniques, even assuming that accepted standards exist for such expertise.

20. While the formation of the ACM Special Interest Group on CHI demonstrates a level of interest in the subject among ACM members, it does not confer any formal recognition by the computing profession. I am a former president of the ACM and remain active in its affairs. Special Interest Groups are voluntary associations created at the initiative of like-minded ACM members. They cover any number of subjects, including computing for the handicapped, the social implications of computing, etc. Membership and positions of responsibility within a Special Interest Group are essentially open to those with the time and inclination to pursue them.

21. HCI also has a credibility problem with software development practitioners. The image lingers of the stereotypical efficiency expert armed with the modern version of a stopwatch, measuring the milliseconds it takes for a user to press the keys on a keyboard—the kind of activity Professor Olson describes at Paragraph 29 of her Declaration. It is difficult for most software developers to relate this kind of analysis to their work or self-image.

22. As Professor Kieras has written,

"Within industry, computer specialists are usually not aware of HCI techniques or results, and often do not take usability [of the user interface] seriously; they believe it is simply a matter of subjective opinion rather than a specifiable design goal like other aspects of the computer hardware and software".

*Overview of HCI* at 43.

23. Faced with this reaction, it is perhaps unsurprising that Professor Kieras expresses frustration in his efforts to achieve credibility for HCI. Placing himself among the "would-be cognitive engineers" faction of the psychologists' wing of HCI, who believe that "the HCI specialist should be able to do *engineering*, just like the rest of the design team" (emphasis in original), he laments:

"the problem for this approach is that it has not really been invented yet; there are no convincing demonstrations that the approach is useful in product design. In addition, the engineering approach to HCI seems to rub almost everybody else in the field the wrong way."

*Overview of HCI* at 45.

24. Although much of the psychological jargon of HCI may be new in the computer field, the issues of user interface design that it attempts to address (in its own way) are scarcely new. User interface issues have existed, in some fashion, for



as long as computing machines have existed. Those of us who were active in computer science from before the time it was known as computer science did not discover the "user interface" when the first psychologist tried to apply his or her experimental techniques to study a person using a computer.

25. The theoretical contributions of HCI may eventually add some insight to the analysis of software design, but they cannot yet substitute for practical experience. As stated in prior declarations, I have participated in writing hundreds of computer programs and have been involved in the design of numerous large-scale systems. Moreover, far from shrinking from my consulting engagements, I am proud of them since they keep me abreast of the concerns of industry and the cutting-edge issues in the field.

26. Professor Olson's false deduction from her spreadsheet usage experiment is an example of the kind of glaring "real world" error that would cause the practitioner to dismiss HCI as irrelevant to the work at hand.

#### *The Bounds of Advocacy*

27. I assume that Professors Kieras and Olson believe that the result they are trying to accomplish—to help Borland win and thereby to "free" command hierarchies from proprietary restriction—is right, and that they may believe that the kind of comments about me they have put their name to is all part of the game.

28. I cannot be so charitable towards Borland's lawyers, however, in particular Gary Reback, Edmond Gregorian and Stuart Meyers of Fenwick & West. Late last year I worked with these men as a witness on "clean room" development procedures in a litigation involving their client, Compuware. They knew of my work in the *Paperback* case and discussed it with me in some detail, in the course of preparing and defending my deposition in the *Compuware* matter.

29. Although they might well have anticipated, under the circumstances, that Lotus would call upon me again, not once

in that entire engagement did the Fenwick attorneys mention to me that they were simultaneously representing Borland in this litigation against my client, Lotus. I am still shocked and embarrassed that I was not told.

30. The accusation they make in their brief that I plagiarized from Fred Brooks' book, *The Mythical Man-Month*, is false and out of bounds. Ironically, the trial testimony they refer to in their brief is from a transcript I gave them to assist in defending me in the *Compuware* litigation.

31. Clearly I know of Fred Brooks' work. I have known Fred from long before that book was published and consider him a friend. Certainly I have referred to his work in the past, as do many others in this field.

32. I did not copy from Fred's book and I did not try to pass his work off as my own. There are many "rules of thumb" in software development. Even Professor Kieras, I note, in his deposition described the allocation of one-half of the coding effort to generating the user interface for certain types of programs, which he describes at Paragraph 47 of his Declaration, as "sort of a shared rule of thumb that many of us have used". (Vol. 2, pp. 339-343)

33. My "rule of thumb" is supported by my own experience as a software developer, programmer, designer, manager, consultant and teacher for more than 35 years. Never before in that experience has my personal integrity been attacked.

#### *Points of Contention*

34. The vigor of the attack on me is somewhat puzzling in light of the relatively few points in my declarations with which Borland's witnesses actually disagree. Despite the claim that I am supposedly untutored in user interface design, none of the witnesses objects to any of my statements concerning the factors a software developer takes into account in designing an appropriate user interface for a product, or the various alternatives and trade-offs to consider in that design.

35. Instead, both Professor Kieras (at ¶¶ 41-49) and Dr. Liddle (at ¶¶ 38-42) fault what they perceive as an overgeneralization on my part concerning the relative significance of user interface design, as opposed to program coding, in software development. The thrust of their criticism seems to be that, for some types of programs with nominal user interfaces, the coding effort could be relatively more difficult or time consuming than the design.

36. Even assuming this point to be true, I fail to see its pertinence. My discussion assumes, of course, that we are speaking of programs that are designed to have meaningful user interfaces, since I understand user interfaces to be the subject at issue here.

37. In making this criticism, moreover, Professor Kieras is not very careful in distinguishing among the different types of development activity. For example, to illustrate his point about the difficulty of coding, he describes (at Paragraphs 44 and 46) two projects in which the development of the programs' internal workings appeared difficult to him. His discussion imprecisely lumps together the determination of the programs' functionality with the coding effort itself; the former, however, is typically viewed as part of a program's design.

38. Moreover, the determination that an "adequate" user interface would be sufficient for the CAD program he mentions at Paragraph 46 itself reflects a prior design decision. Professor Kieras tells us nothing about the considerations that went into that decision, and he revealed in his deposition that he was involved neither in the design of the user interface of that program nor in its coding. (Vol. 2, pp. 333-339)

39. Professor Kieras also speaks loosely when he refers in Paragraph 48 of his Declaration to designing the "details of the user interface for usability", and asserts that such "details" are typically left to the "coders" to resolve at the end of the development process. Although it is unclear what he means by "details", he cannot mean to suggest that the entire user interface design is nothing more than such a

"detail". If so, his experiences must have involved some very poorly designed software.

40. Dr. Liddle discusses, at Paragraph 40 of his Declaration, the degree to which a user interface is specified in the kind of functional specification document that is frequently drawn up in the preliminary design phase of the development process. The creation of such a functional specification typically marks one specific point in the design process, and the documents vary widely in their level of detail with respect to all elements of a program, depending on the developer's needs, resources and goals. Some are very explicit; some are sketchy.

41. By referring to the functional specification, Dr. Liddle misses my point entirely. I did not state that the user interface is the "most critical task" in *functional specification*, but rather in the "software design and specification" process as a whole. Indeed, in my *Paperback Declaration* at Paragraphs 29 and 30 I distinguished between the functional specification and the "detailed creation of the program's user interface"; I suggested only that the developer should "begin to define" the software's externals, including its user interface, in the functional specification.

42. I do not disagree with Dr. Liddle's point at Paragraphs 46 through 48 of his Declaration concerning the difference in difficulty between developing a "clone" that merely "mimics the behavior" of another product, and one which provides commercially acceptable performance. I made that very point in Paragraph 98 of my *Paperback Declaration*, immediately following the paragraph from which Dr. Liddle quotes.

43. My point about "cloning", as plainly stated in Paragraph 99 of my *Paperback Declaration*, was simply that it is not technically difficult to achieve, holding performance issues aside, and that it is in all events easier than the design and development of original software. I do not read Dr. Liddle as disagreeing with those propositions. Certainly he cannot believe that Borland encountered any great conceptual or



design difficulties in the process of incorporating the 1-2-3 menu tree into its products.

44. Both Dr. Liddle and Professor Olson at Paragraphs 54-55 and 35 of their respective Declarations make what I consider to be an absurd criticism. Both assert that there is a limited range of words that could be sensibly employed to represent the 1-2-3 menu commands in the 1-2-3 menus, assuming that all prior design choices made by the developers remain the same, such as the use of words rather than icons, first-letter keystroke association, and the arrangement of the menu tree.

45. However, the statement in Paragraph 88 of my *Paperback* Declaration to which their comments are addressed was not confined to Lotus 1-2-3, menu-driven user interfaces or even spreadsheet programs specifically. Even for spreadsheet programs, the potential variations in user interfaces or menu trees cannot be analyzed exclusively by reference to the 1-2-3 menu tree. The question should be, how many alternatives to the 1-2-3 menu tree are there for expressing a spreadsheet user interface? The question Dr. Liddle and Professor Olson put is, how many different ways are there to express the 1-2-3 menu tree? The question is invalid and answers itself.

46. Moreover, I fail to see how either could interpret my reference to "the constraints of language" as anything other than a recognition that, when words are employed in a user interface, the "language"—i.e., the words—must communicate to the user. That is not so much a "constraint" on the number of choices available to the developer in designing a user interface as an underlying goal or premise of user interface design.

47. Another instance where Dr. Liddle and Professor Olson disagree with me only because they have made a different implicit assumption is their assertion, at Paragraphs 67 and 50 of their respective Declarations, that it is incorrect to state that a spreadsheet program providing the same functionality as 1-2-3 need not use the same commands.

48. From their preceding discussion, it is clear that both disagree with me only because they adopt a definition of 1-2-3's "functionality" that includes the user's ability to modify and debug 1-2-3 macros by on-screen reference to the 1-2-3 menu tree, while using some other spreadsheet program.

49. Again, both have framed the question improperly. They ask, is there a way to recreate 1-2-3 without using the same menu tree? The valid question is, could a spreadsheet program do everything 1-2-3 does, including execute macros, without duplicating the 1-2-3 menu tree? In my opinion, there is no doubt that it could.

50. Moreover, Dr. Liddle and Professor Olson's point, at bottom, goes to the somewhat different issue of compatibility, not to the feasibility of alternatives to the 1-2-3 menu tree. In my opinion, not only is it possible to provide "macro compatibility" with 1-2-3—i.e., the ability of another program to execute macros written originally for use with 1-2-3—by means of a translation or conversion process, but it also is possible to provide for the modification or debugging of those translated or converted macros by the same process.

51. The set of "Menu Equivalent Commands" in Quattro and Quattro Pro, and their association with both the 1-2-3 and "native" menu trees in those products, illustrates how the "mapping" for such a translation or conversion process could be achieved. They further suggest that those products could have easily provided a conversion capability instead of duplicating the 1-2-3 menu tree in their "compatible" modes.

52. Yet another disagreement without substance is Professor Kieras' erroneous reading of Paragraph 71 of my *Paperback* Declaration (at Paragraph 37 of his). I observed generally that a developer should, in choosing the organization of a menu tree, seek to design one that "assists the user in selecting the commands necessary to accomplish specific tasks". Professor Kieras does not dispute this.

53. Instead, he pretends that I was stating that the words in the 1-2-3 menus provide sufficient information to be a sub-

stitute for the product's documentation, tutorials or help screens—which I have never asserted.

54. I *did* state in my *Paperback Declaration* at Paragraph 118 that the 1-2-3 menus, including the long prompts and their organization, have an “informative dimension like that of a *thumbnail* user's manual, especially for new or infrequent users” (emphasis added), and I mentioned the additional contribution of the “Help” facility in the very next sentence. This is still my opinion.

55. Nevertheless, it seems entirely irrelevant to me whether or not the menus and long prompts taken as a whole, or the menu commands themselves, would necessarily serve as a complete substitute for a user's manual or training course, or could provide *all* the information a user would need to learn how to use 1-2-3. It remains true that the menu commands convey valuable information to the user in that regard. Professor Kieras' point goes only to how *much* information they provide, not *whether* they provide it.

56. Moreover, to the extent he quibbles over a characterization of that information as “explanatory” or “descriptive” or “identifying” in nature, he cannot deny that the act of conveying that information is a form of communication.

57. Professor Olson's criticism of my use of the term “mental model” at Paragraphs 91 to 94 of her Declaration is another fuss over nothing. The term “mental model” is not universally defined and, in any event, I believe my definition at Paragraph 30 of my *Paperback Declaration* is entirely consistent with the definition she gives at Paragraph 93 of hers.

58. Again, she simply misreads Paragraph 106 of my *Paperback Declaration* to claim that I equated the 1-2-3 menu structure with its “mental model”. What I said was that the menu structure presents the user with a “particular approach to, or model for, the solution of spreadsheet-related tasks and problems”—in exactly the same sense and using almost exactly the same terms as her lengthy discussion at Paragraphs 58 to 62 of her Declaration concerning alleged dif-

ferences in the “problem solving approach” or “approach [that 1-2-3 and Quattro Pro] make[ ] available to the user for solving problems”.

59. Her concluding remarks at Paragraph 94 about the 1-2-3 menu commands themselves not aiding the user in determining which commands to choose (with which I do *not* agree) and therefore not comprising a “mental model” or metaphor are nonsensical in this context. They have no relation to any point I have made.

60. Borland's witnesses greatly exaggerate the differences between the menu trees in the Quattro and Quattro Pro “compatible” modes and in Lotus 1-2-3. I noted in my prior declaration that there were “extensions” to the 1-2-3 menu tree in those products. I mentioned that the majority of additional commands in Quattro stem from four such extensions.

61. From my review, it appears that most of the additional commands in Quattro Pro are found in similar extensions, located in a few places in the menu tree several levels deep. For example, in Quattro Pro one large group of these commands is located at least four levels into the menu tree (following the “Worksheet/Global/Default/Hardware” command) and pertains just to the task of setting printer specifications, which is a limited area of functionality that users would seldom invoke.

62. Most 1-2-3 users would focus on the higher levels of the menu tree, where the differences were slight. If they did not choose to select one of the additional items there, they would never encounter the great majority of additional commands, which branch from those selections. Thus, 1-2-3 users would perceive the “compatible” modes as virtually identical to 1-2-3, regardless of the numerical count of items deep below.

63. In addition, I fail to see the “difference” in “problem solving approach” Borland's witnesses see between 1-2-3 and the Quattro Pro “compatible” mode (for example, at Paragraphs 58 through 62 of Professor Olson's Declaration).



64. For example, I cannot see the distinction in "approach" between "present[ing] next steps to the user", as Professor Olson says the 1-2-3 long prompts do (at Paragraph 61 of her Declaration), and "explaining the result that will be accomplished" by selecting a command, as she says the Quattro Pro long prompts do. Both speak to what will happen after the user selects that choice, to help the user determine whether that is the choice he wants to make.

65. Since the essential purpose of the menu tree is to help guide the user to the next choice, I do not see how telling the user "where he has been, not where he is headed", which Professor Olson in the same Paragraph says the cascading menus in Quattro Pro do, would be of much help to the user at all. Neither do I understand why a user would ordinarily *want* to "judge[ ] whether he has taken the correct command sequence" when he is making his next selection, or how he would necessarily know that his prior choices were in any sense "correct".

66. In my opinion, there is no support for the proposition that any user would perceive these "differences" as amounting to a different "approach". To the contrary, I believe the two products present substantially similar approaches to the solution of spreadsheet-related tasks.

*Is the 1-2-3 menu tree a "system"?*

67. I have studied computer "systems" for many years. As Borland's witness, Dr. David Liddle, graciously noted in his deposition (at pp. 47-48) (copies of which are attached as Exhibit C), my early work in systems design and programming achieved a certain prominence.

68. The term "system" is not well-defined. Generally, it refers to a set of related things for performing a method or process.

69. In a loose way of speaking, a "system" could consist of nothing more than an ordered collection or related set. As applied to computer systems, however, the term usually con-

notes some underlying process for accomplishing some particular result.

70. It might be possible to refer to the 1-2-3 program, as a whole, as a kind of problem-solving "system", because it consists of a related set of components which can perform operations for accomplishing various computational results.

71. I would not call the menu tree of 1-2-3 a "system" because, on its own, it does not perform any operations. It is a communication interface that provides information to the user, to enable the user to communicate with the program and cause the *program* to perform the operations the user desires.

72. In my opinion, it is not true that each identifiable part of a "system" is necessarily a "system" (or "subsystem" of the larger "system"). An example I give is that of a library "system", in which the books in the library are component parts. In that example, I would not ordinarily consider the books to be individual "systems".

73. By extending the term "system" to its broadest meaning, any set of things in which a pattern can be discerned would become a "system".

74. If the underlying operations that a "system" can perform could, at the same time, include the "process" of communication, not only the 1-2-3 menu tree but many other things not typically considered as systems, such as the individual books in my previous library example, would become "systems". Systems designers would ordinarily have no reason to make such an analytical stretch.

75. I also do not believe that the 1-2-3 menu tree becomes a "system" when the 1-2-3 macro language is considered. Macros are written by *reference* to, not "use" of, the 1-2-3 menu tree. Macro-writing is an operation performed by the user that is external to the menu tree itself. Thus, the menu tree is no more a "process" for creating macros than a dictionary is a "process" for writing text.

76. Moreover, 1-2-3 could provide, as does Quattro or Quattro Pro, a macro language that did not closely correspond to the words in the 1-2-3 menus. Any programming symbol could technically be used in a macro language to represent any of the items in the 1-2-3 menus. Thus, there is no necessary linkage between the menu tree and the macro language.

77. Alternatively, 1-2-3 could provide no macro facility at all. If the macro language is what turns the menu tree into a "system", it follows that removing the macro facility would make the menu tree no longer a "system". In that situation, the determining factor in defining the "system" would be an external operation, *i.e.*, the writing of macros. This would not be a sensible outcome under systems analysis.

I declare under penalty of perjury that the foregoing is true and correct. Executed on November 1, 1991.

/s/ BERNARD A. GALLER

Bernard A. Galler

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

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Civil Action No. 90-11662-K

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LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.

*Defendant.*

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DECLARATION OF MARVIN GOLDSCHMITT

I, MARVIN GOLDSCHMITT, hereby declare under penalty of perjury as follows:

A. *Identity of Declarant*

1. I am the "Marv Goldschmidt" [sic] listed in ¶ 73 of the Affidavit of Mitchell D. Kapor filed in the case of *Lotus Development Corporation v. Paperback Software International and Stephenson Software, Ltd.*, Civil Action No. 87-0076-K (the "Kapor Affidavit"), as one of the five persons of the Lotus 1-2-3 "development team" who met with Mitch Kapor "to determine each word choice, location and menu arrangement" of the menu command hierarchy of Lotus 1-2-3.

2. I was awarded a Bachelor of Arts degree in Psychology from the State University of New York in 1974, and a Master



of Arts degree in Psychology from Virginia Commonwealth University in 1979.

#### B. *Responsibilities at Lotus*

3. I was employed as Director of Product Marketing for Lotus Development Corporation ("Lotus") from June 1982 to May 1983. I was responsible for all phases of the introduction and initial marketing of Lotus 1-2-3, including product positioning, final feature selection, packaging, product testing, development of training programs, pricing, and content of promotional material. In my role as Director of Product Marketing, I worked closely with Mitch Kapor ("Kapor") and Jonathan Sachs ("Sachs") in the design of the menu command hierarchy of Lotus 1-2-3, as shipped.

4. I served as Vice President of Business Development for Lotus from May 1983 to November 1985. I was responsible for development and implementation of strategies for product planning, design and positioning, international business initiatives, and development of marketing channels. During my tenure as Vice President of Business Development, I chaired the Software Protection Committee of the Association of Data Processing Service Organizations (ADAPSO) for one year.

#### C. *Subsequent Professional Experience*

5. After leaving Lotus, I worked as an independent consultant in the computer industry from November 1985 to March 1987. From April 1987 to October 1987 I served as a Vice President of Prophecy Development Corporation.

6. From October 1987 to February 1988 I served as the Chief Executive Officer of Singha Systems Inc. From November 1990 to March 1991 I served on the Board of Directors of Associative Design Technology (Westboro, Massachusetts). From April 1988 to May 1991 I served on the Board of Directors of Saber Software, Inc. (Cambridge, Massachusetts).

7. I am currently a member of the Boards of Directors of Symbiotics, Inc. (Cambridge, Massachusetts), Clear Logic, Inc. (Boulder, Colorado) and Persoft, Inc. (Madison, Wisconsin), all of which are involved in the development and/or marketing of advanced software and hardware products in the personal computer industry.

8. I maintain an active consulting practice in which I assist companies with strategic market planning for major projects, particularly with respect to basic strategies and tactics for the development and merchandising of products. Most of this type of work has involved personal computer software products. Some of the more recent examples of this work have been for Saber Software, for which I set up international operations over a period of a year and a half, and for Eastman Kodak, with which I have been working for seven months.

9. Since 1988, I have served as a consultant to a number of venture capital firms, helping them to evaluate investment opportunities in high technology products, especially personal computer software products. I have done such work for Frontenac Company of Chicago, Bessemer Venture of Boston and California, and Burr, Egan & Deleage Company of Boston.

#### D. *The 1-2-3 User Interface as a Whole*

10. Many of the elements of the Lotus 1-2-3 user interface were drawn from two predecessor computer programs written by Kapor known as VisiTrend and VisiPlot, such as the two-line moving cursor menu, the use of full word command names, command selection based on highlighting and pressing the enter key or pressing the first letters of the command name, and long prompts appearing on the status line following highlighting of a command.

11. Sachs worked for more than a year on the design, implementation, testing and debugging of the code for Lotus 1-2-3. Only after the bulk of the code had been written and tested, and the functions the program was to perform were

settled in about August 1982, was the "command hierarchy" portion of the Lotus 1-2-3 user interface fleshed out and refined.

#### E. *The Command Hierarchy of Lotus 1-2-3*

12. The "command hierarchy" portion of the Lotus 1-2-3 user interface is a system—a particular step-by-step approach—designed by Kapur and Sachs for the solution of numerical problems using a spreadsheet. By "command hierarchy," I mean the particular hierarchical organization of command names in which, as Kapur describes in ¶ 44 of the Kapur Affidavit, "the selection of one command option from the first level menu [leads] in turn to another array of command options on a second level menu (or 'submenu'), and so on, branching out in a sequence of descending menu levels."

13. The command hierarchy of Lotus 1-2-3 was created to provide to the user an effective and systematic approach to the solution of numerical problems. The hierarchical organization of the menus was chosen to enable the user to map out and perform functional steps for accomplishing particular numerical tasks.

14. The command hierarchy was implemented based upon a number of functional rules that Kapur had set. Some of these rules were based upon principles of cognitive psychology. For example, Kapur felt that no more than seven (plus or minus two) commands should be contained in any given menu, because that is the number of items of information that human beings can retain in memory simultaneously.

15. Similarly, commands to be used most frequently should be grouped at the top of the hierarchy; commands displayed within a given menu should appear from left to right in declining order of likely frequency of usage; and commands representing related features should be grouped together on a single level of the hierarchy.

16. Each command of the hierarchy was identified by a single word. The words were chosen to convey to the user in

the most direct and simple way the function of each command.

17. We ensured that each word in a particular menu began with a different letter so that users could invoke the command by typing only the first letter of that command on the keyboard. As a result, experienced users of Lotus 1-2-3 can become so familiar with the first-letter keystrokes for invoking various commands that they begin to think of those commands as keystroke patterns, and their fingers reproduce those patterns out of habit.

18. The command hierarchy of Lotus 1-2-3—the words and their order—was laid out by Kapur, Sachs and myself in a series of meetings during the final few months of the product development process. My role in establishing the words of the command hierarchy and their order was to make sure that the hierarchy was, within the framework of the functional rules established by Kapur, both marketable and useable.

#### F. *Derivation from VisiCalc*

19. One of our goals in creating the command hierarchy of Lotus 1-2-3 was to enable experienced users of VisiCalc to move from that product to Lotus 1-2-3 with a minimum of difficulty. Accordingly, there were instances in which we made certain command names or portions of the hierarchy the same as VisiCalc. For example, we chose the slash key ("/") as the key for activating the menus, not only because it was a convenient key to use, but because it was consistent with the menu access procedure with which VisiCalc users were already familiar.

20. In other instances, we were forced to depart from the VisiCalc menus for functional reasons. For example, we had to rename VisiCalc's REPLICATE command to COPY in Lotus 1-2-3, because the first letter "R" had already been devoted to the RANGE command in the top level menu.



### G. *The Documentation, the Long Prompts and the Help Facility*

21. "Documentation" was prepared to accompany the diskettes containing the Lotus 1-2-3 computer program. The documentation explains the operation of the program and the use of the command hierarchy system. A number of tutorials were included in the documentation to train purchasers how to use the system through illustrative step-by-step procedures.

22. Similarly, the long prompts and the on-line, context-sensitive help facility were added to the Lotus 1-2-3 user interface to explain to the user the functions of the program. The long prompts were added in a line immediately beneath the menu command line in order to explain the functions and options available in the command hierarchy, so as to facilitate acclimation to the program by new users.

23. More particularly, the long prompts were designed: (a) to enable the user to determine the next choices that will become available if the user selects the currently highlighted function displayed on the menu command line, and (b) when the user has reached the "bottom" of a series of submenus in the command hierarchy, to explain the functional result that will take place when the user selects the highlighted function in the command line.

### H. *Reasons for the Success of Lotus 1-2-3*

24. In my role as Director of Product Marketing for Lotus 1-2-3, it was my responsibility to conduct research to determine what features potential users wanted in a new spreadsheet product. Such research was of critical importance to the company, because the success of business software was largely determined by its functional features and power.

25. I conducted this research in part by giving numerous demonstrations of Lotus 1-2-3 (indeed, I believe I was the first person ever to formally demonstrate Lotus 1-2-3 to someone outside the company), and by holding many conferences with potential users to determine what they wanted.

For example, I demonstrated a prototype of Lotus 1-2-3 to a group of potential users at a computer store known as Computer Works in Westport, Connecticut on August 30, 1982 to solicit input on what functional features they would like to have in a new spreadsheet that would run on IBM personal computers.

26. In addition, in early September 1982, I formed a group of ten to fifteen persons who agreed to do extensive testing of various early versions of Lotus 1-2-3 up until the time of its first commercial release. These testers gave us detailed feedback on the product and its functioning. Many suggestions were made, both with respect to functional features of the product and its user interface, many of which were incorporated into the commercially released version.

27. I also followed user reactions closely after the product's introduction to determine what features of the product users liked, and areas in which improvement was needed in later releases.

28. Based upon my market research, I determined that what users seemed to want was a new business productivity product incorporating spreadsheet, business graphics and database functions, and that would improve upon many of the perceived limitations of what was then the leading spreadsheet product, VisiCalc. Many users felt that VisiCalc was too slow, and they wanted a spreadsheet that would run on the IBM personal computer. In addition, they wanted a spreadsheet that would allow them to vary the widths of columns, to format numbers in different formats, and to handle spreadsheets of larger size. Many users also desired to have full words in the menus rather than only first letters, as VisiCalc had.

29. In the Fall of 1982, I wrote a memorandum summarizing how the company should position the new product. In that memorandum, I analyzed the features of Lotus 1-2-3 that I believed would cause it to be a success in the marketplace. Those features included all the ones that customers were requesting, as well as several others, such as the two-line "moving cursor" menu, an on-line help facility, an interactive

tutorial, ranges of cells highlighted in inverse video, named ranges, and a macro facility.

30. By providing these functional enhancements to the spreadsheet portion of Lotus 1-2-3, as well as functionally integrating database and graphing capability into one product, which capability VisiCalc did not have at all, we created a product that was functionally superior to VisiCalc and all other spreadsheets on the market at the time. In addition, we created a product that was specifically engineered to take advantage of the power and hardware design of the new IBM personal computers that had recently been introduced to the market. The success of Lotus 1-2-3 was the direct result of these capabilities and enhancements.

31. The command hierarchy per se contributed to the initial success of Lotus 1-2-3 only insofar as it served as a portal to the powerful functionality of the product. The Lotus 1-2-3 command hierarchy was easy to use and felt natural to the user. I believe that it is possible that alternative particular command names and command hierarchies could have been developed which would have felt as natural to the user as that of the actual Lotus 1-2-3, and the product containing that alternative command hierarchy would still have achieved the same level of success.

\* \* \*

I declare that the foregoing is true and correct, and that I have personal knowledge of the matters set forth above. If called as a witness, I could and would competently so testify.

Executed under penalty of perjury under the laws of the United States this 24th day of September 1991 at Burlington, Massachusetts.

/s/ MARVIN GOLDSCHMITT  
Marvin Goldschmitt

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

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Civil Action  
No. 90-11662-K

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LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.

*Defendant.*

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DECLARATION OF DAVID E. KIERAS

I, DAVID E. KIERAS, hereby declare under penalty of perjury as follows:

A. *Summary of Experience*

1. I am the person in the Department of Electrical Engineering and Computer Science at the University of Michigan who teaches computer user interface design. To my knowledge, Bernard A. Galler has never taught a course at the University of Michigan devoted to computer user interface or other human/machine interface issues. My academic credentials are set forth below.

2. As more fully described in ¶ 29 below, I have been retained by major computer companies like IBM and Schlumberger to teach courses and consult with respect to the



design of good computer program user interfaces. I have also given these courses in Europe to Schlumberger's overseas operations.

3. As more fully described in ¶¶ 25-28 below, I have written many computer programs in the artificial intelligence language known as "LISP" (List Processing Language), including a complicated program prepared under contract to the Office of Naval Research for automatically detecting problems of comprehensibility in textual materials. I am currently involved in a project sponsored by the Ford Motor Co. to develop a computer-aided design system for creating ergonomic designs for workplace furniture. I am also collaborating with another Professor of Computer Science on the design of user interfaces for advanced computer aided design systems for electronics.

#### B. *Academic and Other Professional Credentials*

4. I was awarded a Bachelor of Arts degree in Psychology from Rice University in 1969, and a PhD in Experimental Psychology from the University of Michigan in 1974. I was an R.K. Mellon Postdoctoral Fellow at Carnegie-Mellon University from 1974-76.

5. I have published approximately 31 journal and conference papers, 14 book chapters, two book reviews and one book (as co-editor). Of my published papers and book chapters, 18 are on the subject of the design of computer user interfaces and other human/machine interface topics. I have authored or co-authored approximately 35 technical reports distributed under research contracts, 13 of which are on the subject of the design of computer user interfaces and other human/machine interface topics. I will be co-authoring a textbook on user interface design during the next year or so.

6. I have delivered 17 invited lectures and symposia on computer user interface and related topics. A copy of my current curriculum vitae is attached in Exhibit A to this declaration.

#### C. *My Work at the University of Michigan*

7. I am an Associate Professor with tenure in the Department of Electrical Engineering and Computer Science, and in the Program in Technical Communication (College of Engineering) at the University of Michigan. In addition, I hold appointments as an Associate Professor in Industrial & Operations Engineering Department and in the Department of Psychology at the University of Michigan.

8. Among the courses I teach is an upper division course titled "User Interface Design and Analysis." This course focuses on the theory and practical implementation of good computer user interface design. Students are required to complete four projects in which they apply some of the methods, guidelines and techniques of user interface analysis and design to actual software or other systems.

9. I am frequently asked to referee papers on various computer user interface topics for the following journals: International Journal of Man-Machine Systems and Human-Computer Interaction. I have also served as a reviewer of papers for the Association for Computing Machinery (ACM) Special Interest Group on Computer-Human Interaction (SIGCHI) Program Committee Conference.

10. I regularly serve on the dissertation committees of PhD candidates working on computer user interface issues. To my knowledge, Bernard A. Galler has never served as a dissertation adviser, or a member of the dissertation committee, for any student working in the field of computer-human interaction (CHI).

#### D. *The CHI Field*

11. I have read the Declaration of Judith Olson submitted in this case (the "Olson Declaration"). I find her description in ¶¶ 8-20 of that declaration of the academic discipline of CHI to be accurate, and I agree with her statement that academics who work in the field of CHI and computer user

interface design would normally be expected to attend conferences devoted to CHI issues and to publish papers in the proceedings of these conferences and in the various relevant scholarly journals.

12. Over the last 8 years, I have attended approximately 8 conferences, symposia and seminars devoted specifically to CHI issues. I cannot recall ever having seen Bernard A. Galler at any of these meetings, nor has he presented any papers at any of the meetings I have attended.

13. I also regularly read articles in the scholarly journals that publish material related to the CHI field. I am unaware of any paper that Mr. Galler has ever published on the subject of CHI, in any of the scholarly journals or otherwise.

14. I am a member of the following professional societies and interest groups devoted fully or in part to the study of CHI issues and computer user interface design: the Cognitive Science Society, the Psychonomics Society, and the ACM Special Interest Group on Computer-Human Interaction (SIGCHI). To my knowledge, Mr. Galler is not a member of any of these societies, nor does he regularly attend or participate in their activities.

15. I do not consider Mr. Galler to be an expert in the CHI field in general, or in the design of computer user interfaces in particular. I have read the declaration submitted by Mr. Galler in this case (the "New Galler Decl.") and his declaration originally submitted in the case of *Lotus Development Corporation v. Paperback Software Int'l*, Civil Action No. 87-0076-K (the "First Galler Decl."). If those declarations had been submitted to me as part of my course on user interface design, they would have been unacceptable because they demonstrate no knowledge of user interface design theory and methodology.

16. Based on Mr. Galler's academic credentials, with which I am familiar, I believe that other academics and practitioners who work in the CHI field also would not consider

Mr. Galler to be an expert in that field. Indeed, Mr. Galler has referred inquiries he has received concerning user interface issues to me.

17. It appears from Mr. Galler's curriculum vitae submitted with his declaration in this case that he has never had any formal training with respect to CHI issues or computer user interface design and analysis. Indeed, to my knowledge, Mr. Galler has never before held himself out as an expert on CHI issues in general or computer user interface issues in particular.

#### E. *Other Professional Activities in the CHI Field*

18. Each year, SIGCHI, one of the most prominent and important professional interest groups in the CHI field, sponsors a major conference devoted to CHI issues. These conferences regularly draw several thousand participants from around the world. I am serving as a member of the Organizing Committee for the SIGCHI 1992 Basic Research Symposium. I served as a member of the Program Committee for the SIGCHI 1991 conference and the 1986 Conference on Human Factors in Computer Systems, and am currently on the Program Committee for the upcoming 1992 SIGCHI Conference.

19. I am a member of the Governing Board of the proposed ACM SIGCHI User Interface magazine. Since 1989, I have been a member of the ACM SIGCHI Publications Committee and the Curriculum Advisory Panel.

20. Since 1986, I have been a member of the Scientific Advisory Panel for the Basic Job Skills Research Program of the Air Force Human Resources Laboratory. From 1979 to 1982, I served as a member of the Steering Committee of the Society for Computers in Psychology. I was a member of a review panel convened by the University of Maryland to evaluate its Center for Automation Research, which includes the internationally known Human-Computer Interaction Laboratory.



21. Since 1984, I have been a consulting editor for the *Journal of Memory and Language*. From 1981 to 1984, I served as a consulting editor of *Memory and Cognition*. I referee articles submitted for publication for the following journals: *Memory & Cognition*, *Journal of Experimental Psychology: Human Learning and Memory*, *Journal of Memory and Language*, *Psychological Review*, *Psychological Bulletin*, *Journal of Educational Psychology*, *Quarterly Journal of Experimental Psychology*, *Cognitive Psychology*, *Cognitive Science*, *International Journal of Man-Machine Systems*, *Human-Computer Interaction*, and *Cognition and Instruction*.

22. I have done extensive review of work proposals for federal granting agencies, including the Air Force Cognitive Science Program and several programs of the National Science Foundation—the Cognitive Processes Directorate, the Research in Science Education Program, the Information Sciences Program, and the History and Philosophy of Science Program.

#### F. *My Areas of Research and Special Expertise*

23. My scholarly research has been devoted to two principal areas within the CHI field. First, I consider myself to be an expert on the theoretical principles underlying what makes a system useable to a human, and on science-based approaches to the design of user interfaces. In particular, I study how principles and research from cognitive psychology can be applied to make computer systems more “useable”—easier to learn and easier to use. A special focus of my work in this area is on the development of quantitative models for predicting learning time and task execution time based on a task analysis and pre-implementation description of the user interface of the computer system.

24. Second, I consider myself to be an expert on how people learn about systems such as computers. I study how people learn about computers and other equipment from

technical text—in particular, how they learn procedures for using equipment from textual instruction, and how they learn and use “mental models” to assist them in operating equipment, especially from explicit instruction.

#### G. *Industrial Experience*

25. In addition to my academic work in user interface issues, I have considerable practical experience in the design and implementation of computer programs. In the mid-1960s, I worked part time for two and a half years as a systems programmer on an IBM mainframe at the Baylor University College of Medicine.

26. During graduate school, I wrote the code for a user-programmable real-time system for the IBM 1800 laboratory computer at the Human Performance Center at the University of Michigan. This system was designed to make it easy for experimental psychologists to set up experiments that would process responses from several subjects on five computer terminals simultaneously. I wrote a similar computer program in the late 1970s at the University of Arizona.

27. I have done programming in the field of artificial intelligence, using the computer language known as LISP. In connection with my academic research, I have written a number of programs in LISP for use in cognitive simulation projects—for example, to simulate the modeling by computer of human-computer interaction.

28. One of the most complicated programs I have written in LISP is the “Computerized Comprehensibility System,” which I prepared under contract to the Office of Naval Research. This system, which was approximately 9,000 lines of program code and 13,000 lines of database, was designed to assist writers of technical materials, such as military training documents, by automatically detecting problems of comprehensibility in the materials. This system used artificial intelligence techniques to parse and process natural language

into its component parts. The parts were then analyzed using certain expert system rule-based analyses. The rules drew upon theory and results from cognitive psychological research on comprehension.

29. I have been retained as a consultant by major computer companies such as IBM and Schlumberger to teach courses and consult with respect to the design of good computer program user interfaces to their research personnel and product development and management personnel. I have also traveled to Europe to give these courses to Schlumberger's overseas operations. These courses teach a methodology for good user interface design, and afford an opportunity for extensive discussion and evaluation of specific products and other interface problems of the course recipients.

30. I am currently involved in a project at the Center for Ergonomics at the University of Michigan sponsored by the Ford Motor Co. to develop a computer-aided design (CAD) system for creating ergonomic designs for factory workstations. This system is centered around a graphical user interface for specifying and manipulating human postures. I am co-supervising a graduate student who is working to develop and evaluate a highly efficient user interface for this system.

31. Together with another Professor of Computer Science, I am also working on the design of a user interface of an Electronics CAD (E-CAD) program, which has been licensed to a commercial software vendor for commercial development and distribution. This program allows a computer designer to specify timing relationships for a digital circuit by simply drawing standard "timing diagrams" on the screen. We are also collaborating on the design of user interfaces for extremely sophisticated design systems that automatically generate manufacturing specifications for microprocessor-based computer systems.

#### H. *Familiarity with Spreadsheet Products*

32. I am very familiar with Lotus 1-2-3, with Borland's Quattro and Quattro Pro spreadsheets, and with several other spreadsheet products.

#### I. *The Nature and Role of the Command Words and Their Order*

33. I have examined Lotus' European Patent Application number 90310897.5, reproduced in Exhibit B to this declaration, seeking a patent on a successor user interface to Lotus 1-2-3, including its "command structure." In the section titled "Background of the Invention" (page 2), Lotus describes generally the nature and function of a "command structure" in a software application program as follows:

[T]he command structure of the application defines how users initiate commands or choose options and how they respond to the computer's actions in order to manipulate data in the computer.

34. This correctly characterizes, defines and explains the command structure of an application program and its role and use in the implementation of the program. Command structure means, of course, the collection of commands available in the program and their structural, or hierarchical, relationship.

35. The definition and description in the Lotus patent application is accurate as to application programs generally and as to the command hierarchy of Lotus 1-2-3, versions 1, 1A and 2.0, specifically. This Lotus patent application clearly states, and it is also obvious from the vast body of CHI analysis and research, that the command hierarchy of a spreadsheet application program such as Lotus 1-2-3 constitutes a system that defines the steps or procedures users may follow to perform numerical calculations within a spreadsheet by invoking various commands in the hierarchy. The words of the hierarchy identify the choices of functions available to the user in performing those steps or procedures.



36. The Lotus 1-2-3 command system cannot be used without these words. The words are organized and displayed in a hierarchical relationship, because, as is well known from human factors analysis, this is a more economical way of making the functionality of the system available to the user than displaying all the words at once. In addition, the hierarchical organization imposes, as the Lotus patent application notes, a "logical and operational structure" (page 3, col. 4, lines 14-15).

37. I have read ¶ 71 of the First Galler Decl. in which he asserts that the hierarchical organization of commands in menus "assists the user in selecting the commands necessary to accomplish specific tasks." To the extent this statement is meant to suggest that the words of the hierarchy *explain* to the user how to use the system, I believe it is incorrect.

38. As previously noted, one of my special areas of expertise and research is how people learn about computers and the procedures for using them from technical text. The command words of Lotus 1-2-3, although technical words, in no sense explain to the user the procedures for using Lotus 1-2-3. Those words merely identify the functions that are available in the system that the user may use to follow procedures to accomplish a result.

39. To the extent the user of Lotus 1-2-3 needs explanation and education in what the proper procedures are and in making the correct choice of functions to accomplish a task, that explanation is provided by the documentation for the program, by the help screens, by the tutorials Lotus supplies with the program, and to some extent by the long prompts in the second menu line. I have devoted a great deal of my research to studying ways to improve textual instruction of this type to increase the speed and ease with which a user can be taught the proper procedures. It is absolutely clear that the words in the command hierarchy are part of the system, not the explanation of operation of the system. The command words them-

selves and their hierarchical organization do not teach or explain to the user such procedures.

#### J. *The Relative Effort of User Interface Design and Coding*

40. I have read the assertions in the First Galler Decl. to the effect that the bulk of effort in developing a computer program is spent in generating the specifications (including the user interface) for the program, and not in the coding of the program.

41. Specifically, Mr. Galler asserts in ¶ 40 that coding "is less difficult and requires less creativity and imagination than developing the design in the first place." In ¶ 37, Mr. Galler concludes that "[g]enerally, coding should not consume more than one-fifth or one-sixth of the total time spent in implementing a new program."

42. Mr. Galler then asserts at ¶ 51 that the user interface is the most important part of the product specification:

Within software specification and design, expression of the user interface is probably the most critical task the application developer faces and that in which the most significant creative activity and effort is expended.

43. The net impression created by Mr. Galler's assertions is that the user interface is more important to a product than the code that produces both the program's computational results and the screen display itself. This a gross overgeneralization that is simply not accurate, both with respect to the role that user interface specification plays in the design of many products and the code itself.

\* \* \*

81. Giving a monopoly on the command hierarchy of a program requires competitors to make gratuitous changes to the command hierarchy of the competing product, producing a patchwork that would result in significant detriment to users

in the form of inefficiency, retraining and greatly reduced ease of learning and use, and tedious rewriting of macros.

82. From my years of study and research in the field of CHI and human factors analysis, the single most important thing governing the ease with which users learn and use a new computer program is consistency in the user interface across programs. Human factors analysis and research indicate that requiring each new publisher of a type of product to adopt a new command hierarchy breeds inefficiency and deleterious effects on the usability of new products. Hence, from the standpoint of benefit to software users and the advancement of software development generally, there ought to be a strong presumption against a requirement imposed by the legal system that a designer of a new product adopt a new command hierarchy.

I declare that the foregoing is true and correct, and that I have personal knowledge of the matters set forth above. If called as a witness, I could and would competently so testify.

Executed under penalty of perjury under the laws of the United States this 26th day of September 1991 at Ann Arbor, Michigan.

/s/ DAVID E. KIERAS  
David E. Kieras

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

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Civil Action No. 90-11662-K

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LOTUS DEVELOPMENT CORPORATION,  
*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.  
*Defendant.*

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DECLARATION OF ROBERT H. KOHN

1. I am Vice President, Corporate Affairs and Secretary of Defendant Borland International, Inc. ("Borland"). I make this declaration in opposition to the motion of Plaintiff Lotus Development Corporation ("Lotus") for summary judgment. I have personal knowledge of the matters set forth below and could testify competently thereto if called upon to do so.

2. I joined Borland as in-house General Counsel on March 19, 1987. Although my title has since changed, I have served continuously as the company's chief legal officer since I was hired.

3. By the time I joined Borland, the software product that became Quattro had been in development for approximately two years. Borland's objective was to design and market an innovative spreadsheet software product with its own unique



user interface and menu command hierarchy. The question whether to include an alternative, 123-compatible menu command hierarchy in Quattro, in order to provide users with the ability to execute and debug their 1-2-3 command macros, did not even arise until after I joined the company.

4. When the question whether to include a 123-compatible command hierarchy in Quattro was first presented to Borland's management in the summer of 1987, we were, of course, aware of the fact that Lotus had sued Paperback and Mosaic for copyright infringement. However, we were also aware of the many public statements by Lotus representatives that the lawsuits that it had filed were directed against "clone" products whose external appearance was virtually identical to 1-2-3.

5. I specifically recall finding in our files at the time this issue arose a copy of the article attached hereto as Exhibit A. The article, which appeared in *InfoWorld* on January 26, 1987, shortly after the *Paperback* and *Mosaic* cases were filed, states that "some Lotus supporters" had become concerned "about where Lotus would draw the line on copyright infringement". The article goes on to quote Lotus spokesman Greg Jarboe to the effect that Lotus' claims had been misinterpreted and that the lawsuits were targeted "at two vendors who had copied 99%" of the 1-2-3 product. Other public statements of Lotus officials repeatedly characterized Lotus' target as "cheap rip-offs or imitations", products which "imitate 1-2-3 as closely as possible" and "1-2-3 clones". (See Exhibit B attached hereto)

6. We were confident that whether it included a 123-compatible command hierarchy or not, Quattro could not possibly be characterized as a clone, much less a 99% clone, of 1-2-3. The dissimilarities between these two products, and between Quattro and VP Planner, are discussed elsewhere in Borland's opposition papers and I will not repeat them here.

7. In connection with our decision whether to include a 123-compatible command hierarchy in Quattro (which would be contained in a discrete program file called the 123.RSC

file), I was directed by our Chairman, Philippe Kahn, to make certain that doing so would not infringe Lotus' copyrights in the 1-2-3 program. Since this was a determination that I was unwilling to make myself, I decided to obtain an opinion from outside counsel. Before we received counsel's advice, we had decided that we would not include the 123.RSC file in Quattro unless we obtained a favorable opinion on the infringement question. We had also decided that we would make any changes to the product that counsel recommended. Because of the manner in which Quattro was designed, such changes could be made quickly and easily.

8. To ensure that Borland would receive frank and totally disinterested advice on the question of infringement, I decided to seek an opinion from a law firm that was not our regular outside counsel and that did not represent us on a day-to-day basis. I retained the firm of Brown & Bain, which I understood to be one of the most well-known and highly respected firms in the country specializing in intellectual property issues relating to computer technology. Brown & Bain's clients include IBM, Intel, Apple Computer, Inc. and other leading computer and semiconductor companies, and the firm has been counsel of record in many of the leading cases involving copyright protection of computer programs, including *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240 (3d Cir. 1983) and *NEC Corp. v. Intel Corp.*, 10 U.S.P.Q. 2d 1177 (N.D. Cal. 1989).

9. Roger Borovoy, a Brown & Bain partner, was assigned to head up this engagement. Prior to joining Brown & Bain, Mr. Borovoy had been General Counsel of Intel Corporation, a leading supplier of computer chips, including the 8088 line of chips found in virtually every IBM and IBM-compatible personal computer.

10. I instructed Brown & Bain to conduct a thorough factual and legal investigation. Beginning in early to mid-September, 1987 Mr. Borovoy spent several days at Borland interviewing Quattro development personnel and examining the product and documentation. I was purposely not present

at any of the interviews in order to avoid influencing the results of the investigation in any way.

11. After investigating the law and the facts, Mr. Borovoy called and advised me that he had concluded that including the 123.RSC file in Quattro would not constitute an infringement of any Lotus copyright. I requested an opinion letter to that effect and Mr. Borovoy said that he would prepare one. I also reported Mr. Borovoy's conclusion to Mr. Kahn.

12. On October 28, 1987 I received by telecopy Brown & Bain's written opinion that "Lotus should not succeed in any copyright claim it may assert against Borland based on its 1-2-3 copyrights and Borland's Quattro program or manual". A true and correct copy of the opinion letter is attached as Exhibit C. I distributed copies of the letter to Mr. Kahn and other members of Borland's senior management.

13. By this time, the Quattro product had been publicly announced. The announcement, which was made on September 26, 1987, received first page coverage in the trade press. By the end of October, our advertising had begun to appear in the trade press and consumer magazines as well.

14. Based on the opinion letter from Brown & Bain, Borland decided to include the 123.RSC file in Quattro provided that we did not receive an objection from Lotus. Although we were confident that our legal position was correct and believed it unlikely that Lotus would object to Quattro in light of the Brown & Bain opinion, the obvious dissimilarities between the two products and Lotus' own public statements, we also had every expectation that if Lotus did have some objection to Quattro, they would make it known to us. If Lotus did object, either before or after the release of Quattro, we were fully prepared to determine the nature of Lotus' concerns and to consider making changes to the product in order to resolve them. Indeed, we specifically discussed the fact that Quattro's design gave us the flexibility to make any negotiated changes in the user interface quickly and easily.

15. On or about November 17, 1987, having heard nothing from Lotus, Borland began volume shipments of Quattro to its distributors, dealers and end-user customers.

16. To the best of my knowledge, from that time until this lawsuit was filed in July 1990, Lotus never notified Borland either orally or in writing that it objected in any way to Borland's inclusion of a 123-compatible menu tree in Quattro or Quattro Pro. Moreover, several events that occurred during the intervening years confirmed our belief that our legal position was correct and that Lotus in fact had no objection to our products.

17. At the time Quattro was released, and from time to time thereafter, Borland placed ads for Quattro and Quattro Pro in *Lotus* magazine. *Lotus* magazine was owned and published by Lotus Publishing Corporation, a wholly-owned subsidiary of Lotus. Copies of our advertising, including a four-page gatefold ad for Quattro attached to the front cover of the November 1987 issue of *Lotus* magazine, are attached as Exhibit D.

18. I understand that Lotus may now contend that it was the policy of its wholly-owned subsidiary to accept all competitive advertising, including advertising of products that the parent company believed were infringing. Suffice it to say that to the best of my knowledge, even if such a policy existed, no one at Borland was aware of it. On the contrary, we viewed acceptance of our advertising by *Lotus* magazine as further confirmation that Lotus did not object to the inclusion of the 123-compatible menu tree in Quattro and Quattro Pro.

19. In November 1987, I attended the Comdex trade show in Las Vegas, Nevada. Comdex is the industry's largest trade show. All of the leading personal computer software companies, including Lotus and Borland, rent booths and demonstrate their products to the several hundred thousand people who attend the show each year.



20. Lotus' booth at the November 1987 Comdex was approximately 50 feet away from Borland's booth. During the four days of the show, for at least eight hours each day, Borland representatives were demonstrating Quattro to anyone who visited our booth and answering questions about the product. Although I cannot state from personal knowledge that Lotus representatives actually did so on this occasion, it is common practice for representatives of our competitors to attend demonstrations of our products at trade shows in order to see what their competition is up to.

21. I did have occasion during the show to visit Lotus' booth. While there, I picked up a copy of *Lotus* magazine, containing the four-page gatefold advertisement for Quattro, which Lotus sales personnel were handing out at the Lotus booth.

22. In May 1988, Borland began discussions with Surpass Software Systems concerning possible acquisition of the technology assets of that company. Some months earlier, Surpass had released a 1-2-3 compatible spreadsheet (also called "Surpass") which, unlike Quattro, contained only a 1-2-3 command hierarchy.

23. During the due diligence I conducted for the acquisition, I was informed by Surpass' President that Surpass had never received any notice or claim by Lotus of alleged infringement of Lotus' intellectual property rights.

24. In June 1988, Borland publicly announced its acquisition of the Surpass spreadsheet technology and the transaction was widely reported in the trade press. The transaction closed in September 1988. Borland incorporated the Surpass spreadsheet technology that it had acquired into the product that became Quattro Pro, which was not completed and released until over a year later. At no time during the eighteen-month period between the announcement of the acquisition of the Surpass technology and the shipment of Quattro Pro did Borland receive any notice from Lotus that it objected to Quattro or to the Surpass spreadsheet product.

25. Borland and Lotus were co-defendants in the *Refac* patent infringement suit, involving the 1-2-3, Quattro and Quattro Pro spreadsheets, and had frequent communications and conferences in connection with the case, yet Lotus' counsel never even suggested that Lotus had any objection to the Borland spreadsheet products.

26. Before volume shipments of Quattro Pro commenced in November 1989, I became aware of another commercial spreadsheet product whose user interface was similar to Quattro and Quattro Pro. SuperCalc 5, from Computer Associates, was announced in June 1988 and described in the trade press as offering "menu, macro and file compatibility" with 1-2-3 and "an optional 1-2-3 menu interface". (See Exhibit E attached hereto) SuperCalc 5 was released in February 1989 and, like Quattro and Quattro Pro, contains its own native menu command hierarchy as well as an alternative 1-2-3 compatible command hierarchy. I know of no action against or objection to SuperCalc 5 by Lotus.

27. By the time that Quattro Pro shipped, I had also learned of the official position of the United States Copyright Office that "menu screens and similar functional interfaces consisting of words or brief phrases in a particular format are not registrable." This position statement, by the agency charged with responsibility for copyright registration, was reported in the professional literature (See Exhibit F attached hereto) and served to confirm the advice that we had received two years earlier from Brown & Bain.

28. Numerous other events during this period confirmed our belief that Lotus had no objection to Quattro or Quattro Pro. There were technical discussions between the two companies concerning joint development and mutual product support. (See Declarations of Richard Schwartz and Paul Gross) Lotus also served as a beta test site for Borland computer programming language products. Lotus' Magellan product, which permits the user to run a specified list of applications programs stored on hard disk from within Magellan, includes the ability to run both Quattro and Quattro Pro. (See Exhibit

G attached hereto) Finally, Lotus' own advertising, a sample of which is attached as Exhibit H, identifies "1-2-3 compatible menus" as a key feature of spreadsheet software in comparing 1-2-3, Quattro Pro and other leading spreadsheets.

29. Lotus' attempt in the moving papers to show that Borland expected an objection from Lotus all along is erroneous and highly misleading. For example, Borland's indemnity against a claim by Lotus in our April 1988 agreements with outside developers of Quattro, which I negotiated, was requested by counsel for the developers. I readily agreed to this provision precisely because we were convinced by this time that Lotus had no objection to Quattro. In fact, our own licenses of Quattro to third parties contain broad intellectual property warranties and indemnities, with no exclusion of claims by Lotus.

30. Lotus' claim that Borland retained counsel to "monitor the *Paperback* trial" is also false. Borland did not have a lawyer or any other representative present during any part of the trial. Lotus' assertion that I contacted outside counsel because I believed all along that Lotus intended to sue us is also false. I contacted outside counsel in early 1990 when I learned of conflicting press accounts concerning discussion of Quattro Pro at the trial. I had no idea why Quattro Pro would even be mentioned and I asked outside counsel to investigate. I subsequently received from counsel transcript excerpts that referred to Quattro Pro. None of these excerpts indicated that Lotus was claiming that Quattro Pro infringed its copyrights. In fact, an article in *Computerworld* that I read at the time reported that Lotus' counsel had identified both Quattro Pro and Excel as products that provided 1-2-3 compatibility "while sporting a significantly different look and feel." (See Exhibit I attached hereto) Nothing in what I read or heard about the trial caused me to change my belief that Lotus did not object to our products.

31. In sum, by the time that Quattro Pro was released, Lotus' affirmative conduct and failure to object to its predecessor Quattro for more than two years, along with the other

events described above, had only increased our conviction that Lotus had no objection to Quattro or Quattro Pro's use of a 123-compatible command hierarchy. Lotus' conduct and inaction was a substantial factor in our decisions to include such a hierarchy in Quattro, and later in Quattro Pro.

32. In reliance upon Lotus' conduct and inaction, Borland has spent millions of dollars acquiring technology, developing Quattro and Quattro Pro and marketing these products in their present form. Borland spent \$2.4 million on the Surpass acquisition alone. Development expenses directly attributable to Quattro and Quattro Pro prior to the filing of this suit amounted to at least \$6.0 million. Marketing expenses directly attributable to the two products prior to July 1990 were well in excess of \$12.0 million.

33. Had Lotus made its objections known in 1987, I know that Borland would have made every effort to negotiate a mutually acceptable resolution. Prior to the release of Quattro, we had already decided to negotiate with Lotus in the event of an objection and to attempt to resolve any dispute in that manner. A negotiated solution clearly would have been preferable to the uncertainty, time consumption and expense of protracted litigation with Lotus. Even if a negotiated solution had proved impossible, however, we would almost certainly have filed a declaratory judgment action and attempted to secure a prompt determination of our rights rather than risking millions of dollars while awaiting the final outcome of a case over which we had no control.

I declare the foregoing to be true under penalty of perjury under the laws of the State of California, on this 27th day of September, 1991, at Palo Alto, Santa Clara County, California.

/s/ ROBERT H. KOHN  
Robert H. Kohn



UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

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Civil Action No. 90-11662-K

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LOTUS DEVELOPMENT CORPORATION,  
*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.,  
*Defendant.*

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SUPPLEMENTAL DECLARATION  
OF ROBERT H. KOHN

I, Robert H. Kohn, hereby declare:

1. I am Vice President, Corporate Affairs and Secretary of Defendant Borland International, Inc. ("Borland"), defendant herein. I have personal knowledge of the matters set forth below and could testify competently thereto, if called upon to do so. I have previously made a declaration in this case. This declaration is intended to supplement my earlier declaration (dated September 27, 1991), and to bring to the Court's attention events which have occurred since that time.

2. Shortly after this action was filed, Borland began considering alternative ways in which Borland might be able to offer its customers the ability to run macros written using 1-2-3 without displaying the 123-compatible menu com-

mands. Towards that end, in mid-1990 Borland began developing what is now known as Quattro Pro's Key Reader feature.

3. As I understand it, the Key Reader is a macro translator that allows Quattro Pro to read and execute many 1-2-3 macros without displaying 123-compatible menus. The Key Reader portion of the Quattro Pro product contains only the first letters of the 1-2-3 commands, along with an associated command which is understood by the Quattro Pro program, known as the Borland "menu equivalent" command. When Quattro Pro is asked to execute a macro written using 1-2-3, the Key Reader identifies the letters or sequence of letters which make up the macro, translates the macro into the appropriate Borland "menu equivalent" command, and executes that menu equivalent command. The menu equivalent commands are original to Borland.

4. The addition of the Key Reader feature allowed users to execute many (but not all) 1-2-3 macros without the need to leave the Quattro Pro native mode. In addition, and as I explained in my previous declaration, before this action was filed Borland had no notice of Lotus' claims against Quattro and Quattro Pro, and Lotus' Complaint only refers to the user interface displayed when these products are used in their 123-compatible mode (*see* Complaint ¶¶ 17, 19). Although Borland felt that that its display of the 123-compatible interface was legally permissible, Borland is a responsible, public company sensitive both to its shareholders and its customers. Therefore, in the event it was later determined that Borland could not display the 123-compatible interface, Borland wanted to offer users the ability to run most 1-2-3 macros in a manner that Lotus and this Court had previously indicated was clearly noninfringing, as described below.

5. I am familiar with this Court's decision in *Lotus Dev. Corp. v. Paperback Software Intern.*, 740 F. Supp. 37 (D. Mass. 1990). I first read this opinion shortly after it was issued, and have read it numerous times since then. It was my understanding from this Court's opinion that this Court held

that the 1-2-3 user interface, taken as a whole, is copyrightable (and, in that case, had been infringed) and that a translator for 1-2-3 macros was permissible and would not constitute an infringement of any copyright in 1-2-3. In particular, I interpreted as significant this Court's statement, at 740 F. Supp. at 69, that:

defendants could have instead added a macro conversion capability as the creators of Excel have successfully done (the Microsoft Excel Macro Translation Assistant), and could have provided an on-line help function that would show users the VP-Planner equivalent for 1-2-3 commands. . . . (Lotus itself created a "macro conversion utility" to translate macros among different-language editions of 1-2-3 (e.g., North American, international English, French, German, Italian, Spanish, and Swedish)); Turner Decl. ¶ 10 (Docket No. 309).

6. The Key Reader was first introduced in version 2.0 of Quattro Pro. This version began shipping on about October 17, 1990, and was the first version of Quattro Pro to be introduced after this action began. Because the Key Reader was added to the product late in the development process, it was not initially described in the printed documentation but was fully described (along with approximately 20 other features added late in the development process) in the README text file, distributed with the program. This file is available for display to users during the program's installation process. A copy of a printout of the relevant portion of that README file describing the Key Reader is attached hereto as Exhibit A. All versions of Quattro Pro which have been sold since October, 1990 have included the Key Reader feature.

7. In April, 1991, six months after Borland introduced the Key Reader feature in Quattro Pro, I was informed by counsel that Lotus had explicitly taken the position in discovery in this case that macro execution by means of a translator, such as the Key Reader, would not constitute an infringement of its copyright in 1-2-3. In particular, I read and attached signifi-

cance to the following statement from Lotus' Response to Borland's Request for Admission No. 9:

Lotus admits that it does not contend that the inclusion in a spreadsheet program of the ability to execute macros originally written using Lotus 1-2-3 by means of a conversion or translation program, standing alone, would infringe Lotus' copyrights in Lotus 1-2-3 . . .

I was also aware that, and attached particular significance to the fact that, in Lotus' Response to Borland's Request for Admission No. 12, Lotus admitted that its claims against the Quattro products were limited to the 123-compatible interface of those products (which does not contain the Key Reader), and that Lotus did not have any claim against the Quattro Pro native interface (which includes the Key Reader).

8. This Court held a Status Conference in this case on June 18, 1991, which I attended. At that conference Henry Gutman, counsel for Lotus, brought up the subject of Quattro Pro for Windows, a product under development at Borland at that time. He stated that

[Borland has] not said publicly anything about whether or not their Windows version of the product is going to continue to include the 1-2-3 menus and [sic] alternate user interface. . . I just want to put them on notice now that if they do that, Your Honor, we would consider that an occasion on which we would have to come to the Court for a preliminary injunction.

Transcript of 6/18/91 Status Conference, p. 33. I heard Mr. Gutman make these statements and called them to the attention of my colleagues. I found it of particular significance that, despite the fact that the Key Reader had been in Quattro Pro for several months, Lotus did not indicate that the inclusion of the Key Reader in later-introduced spreadsheet products, such as Quattro Pro for Windows, would give rise to any complaints by Lotus. Based on Mr. Gutman's statements, I concluded that future versions of Quattro Pro, includ-



ing the Windows product, could safely include the Key Reader.

9. Finally, I read the briefs submitted during the second round of briefing on summary judgment in this action and saw that Lotus acknowledged that a macro translation ability in a spreadsheet program is acceptable. Referring to the above-cited portion of this Court's prior decision in *Paperback*, on May 4, 1992 Lotus stated:

[T]he ability of another program to *execute* (i.e., "run") such macros, once written [using 1-2-3] . . . as the Court held, could be provided through alternate means such as interpretation, translation or conversion (as then existed in Excel or the foreign language version of Lotus 1-2-3). 740 F. Supp. at 69.

Plaintiff's Response to Borland Memorandum in Support of renewed Motion for Summary Judgment, Dkt. no. 177, 15-16 n.22.

10. There is no question in my mind that, at all relevant times, Lotus was aware of Borland's Key Reader feature. This feature has been available in all versions of Quattro Pro which have shipped since about October 17, 1990, and it was displayed and discussed in Borland's first videotape submission to this Court in support of Borland's cross-motion for summary judgment, filed September 30, 1991 and produced to Lotus. In fact, the Key Reader was described in detail in the November 1, 1991 declaration of Lotus' expert, James Emery, at paragraph 131.

11. It has been my understanding, based on what I have read in this Court's written opinions, that the Court also views Lotus' possible claims against Borland as limited to user interface issues, and that an internal macro translation capability would be legal. For example, in its first written opinion in this case, this Court used Microsoft's product Excel, which implements a macro translator and which displays the 1-2-3 commands on the screen, as an example of a product that is not infringing. See *Lotus Dev. Corp. v. Borland Intern., Inc.*,

788 F. Supp. 78, 81 (D. Mass. 1992). In its most recent opinion in this case, the Court once again stated that the macro translation issue was *not* a part of this case:

Had Borland created a program that read users' 1-2-3 macros and converted them to macros for use in the Quattro programs' native modes . . . that would have presented a different case from the one now before me.

*Lotus Dev. Corp. v. Borland Intern., Inc.*, 799 F. Supp. 203, 214 (D. Mass. 1992). I read these statements by the Court as confirmation that Lotus' claims could not extend to Borland's Key Reader, and interpreted these statements as guidance to Borland of what would not be considered infringing activities.

12. On July 31, 1992, this Court ruled that the display of Borland's 123-compatible menu command hierarchy constituted an infringement of Lotus' copyrights. Although Borland disagreed with this decision, and even though no injunction had issued, in order to mitigate damages Borland took what it viewed as the appropriate steps for a responsible, public company, and immediately removed its 123-compatible interface from its product, thereby forcing Quattro Pro users to rely exclusively on the Key Reader's capabilities for 1-2-3 macro execution.

13. At that time, the question arose whether the Key Reader feature should also be removed from Quattro Pro. In considering the issues again, I reread the relevant portions of this Court's opinions and Lotus' discovery responses in this case. I made the recommendation not to remove the Key Reader in reliance on this Court's statement that translation was not an issue in the present case, and on the positions Lotus had taken throughout this action, as described above. I relied most directly on the guidance provided by the Court in its July 31 opinion addressing the issue of infringement:

Use of just the initial letters of the command words (together with the long prompts) or of other symbolic

tokens would have been a sufficient alternate method of implementing the system.

*Lotus Dev. Corp. v. Borland Intern., Inc.*, 799 F. Supp. 203, 218 (D. Mass. 1992).

14. In light of the above statement in the Court's July 31 opinion, Borland at first considered implementing an interface which displayed only the first letters of the 123-compatible commands, along with the long prompts. However, because Lotus had also accused Borland of copying Lotus' long prompts (even though almost all of those long prompts are different), and in an effort to take as conservative an approach as possible, Borland decided only to include the Key Reader (which uses only the "initial letters of the command words" which do not even appear on the screen, and which does not use or display the long prompts at all) in future versions of its products.

15. Quattro Pro for Windows began shipping in mid-September, 1992. For the same reasons previously discussed, it was determined that this product would not display the 123-compatible menus, but would include the Key Reader feature. Borland would replace the 123-compatible interface in its products to afford our customers full macro compatibility if allowed to do so by this Court or a higher Court.

I declare under penalty of perjury that the foregoing is true and correct. Executed this 25th day of January, 1993, at Scotts Valley, California.

/s/ ROBERT H. KOHN  
Robert H. Kohn

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

Civil Action No. 90-11662-K

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LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.,

*Defendant.*

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DECLARATION OF THOMAS M. LEMBERG

I, Thomas M. Lemberg, declare:

1. I am Vice President, General Counsel and Secretary of Lotus Development Corporation ("Lotus") and have been since April 1987. I make this declaration upon my personal knowledge as a duly authorized officer of Lotus.

2. On July 2, 1990, the Board of Directors of Lotus authorized management to instruct its attorneys, O'Sullivan Graev & Karabell of New York and Hale and Dorr of Boston, to file this action for copyright infringement against Borland International, Inc. ("Borland"). (A true copy of the minutes of the board meeting of July 2, 1990, as produced to defendants herein in a form redacted to exclude information protected by the attorney-client privilege, is attached hereto as Exhibit A.)

3. When management of Lotus first became aware of the commercial release of Quattro, Lotus was already before this court as a litigant in both the *Paperback* case and the companion case against Mosaic (*Lotus Development Corp. v. Mosaic Software, Inc.*, Civ. Action No. 87-0074-K).



4. In early 1988, Lotus management considered the possibility of the existence of a legal claim against Borland for the inclusion in Quattro of what appeared to us to be potentially a new form of "clone" of Lotus 1-2-3.

5. While we considered that Lotus might well have a valid claim against Borland, we determined not to assert any such claim at the time. Despite our belief in the merits of Lotus' case against *Paperback*, we concluded that it would be prudent and appropriate to wait until we received a decision in the *Paperback* case before making a final determination as to whether to take any legal action concerning Quattro. We also did not want to delay the resolution of the *Paperback* suit, which we feared might occur if we were to commence an action against Borland and that action would be consolidated in some manner with *Paperback*. Moreover, we could not yet determine whether the commercial threat posed by Quattro was sufficiently genuine to require us to incur the costs, diversion of management time and resources, and risks attendant to another piece of major litigation at that time.

6. At the same time, we were confident that we had made Lotus' position concerning the scope of its proprietary rights in the 1-2-3 user interface and menu structure abundantly clear, both in the *Paperback* lawsuit and in other public statements. An example is attached as Exhibit A hereto, consisting of a copy of a statement by Jim Manzi, Lotus' chief executive officer and chairman, that Lotus provided to *PC Magazine*, a recognized trade industry periodical claiming a broad circulation. The statement appeared in its May 26, 1987 edition, among a series of articles discussing the *Paperback* suit and related issues.

7. We also had reason to believe that Borland, or at least its chairman, Philippe Kahn, was aware of the *Paperback* suit and of the nature of the claims made in it. One of Lotus' employees had observed Mr. Kahn's participation in a public debate launched on the CompuServ electronic mail network following the suit, and had printed out a copy of the various communications. Because of this material, I was aware (as

were others of Lotus' management) of the statements made by Mr. Kahn when Lotus commenced the *Paperback* case expressing apparent support of Adam Osborne and Paperback and hostility to Lotus and its legal position. (A copy of excerpts from the CompuServ material is attached hereto as Exhibit B.)

8. In connection with our decision, we resolved not to make any public comments concerning our legal position vis-a-vis Quattro. I was given the management responsibility to enforce this policy on an ongoing basis. At no time did I authorize anyone within Lotus to make any statements on that subject, to Borland or anyone else, and to my knowledge no one did.

9. After Lotus commenced this action on July 2, 1990, I learned for the first time that Borland had filed an action against Lotus on June 29 (the day after the *Paperback* decision) in the U.S. District Court for the Northern District of California. In that action, Borland alleged that Lotus had made indirect threats to sue Borland in the event that Lotus won the *Paperback* case. (Copies of the complaint, amended complaint, and various affidavits served upon Lotus and submitted by Borland in that action are attached hereto as Exhibit C.)

10. As I testified (by Declaration) in that action, to my knowledge, no such threats were ever made, directly or indirectly; certainly, none were authorized by me or, to my knowledge, by anyone else at Lotus authorized to do so.

11. By the same token, to my knowledge, no one from Lotus has ever told any representative of Borland (or anyone else) that Lotus consented or agreed to the appropriation of the Lotus 1-2-3 user interface, or the use of the 1-2-3 command menus and/or menu tree, in Quattro or Quattro Pro. No such statement has ever been made by me or, to my knowledge, by anyone else at Lotus authorized to do so.

12. Indeed, I am unaware of any communication between the two companies, directly or indirectly, on the subject of the

potentially infringing nature of Quattro and Quattro Pro whatsoever prior to the filing of this suit. If any such communication did occur, I am certain that the Lotus participation in it was unauthorized.

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct.

Executed at Cambridge, Massachusetts on May 6, 1991.

/s/ THOMAS M. LEMBERG  
Thomas M. Lemberg

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

Civil Action No. 90-11662-K

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LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.

*Defendant.*

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DECLARATION OF DAVID E. LIDDLE

I, DAVID E. LIDDLE, hereby declare under penalty of perjury, as follows:

A. *Identity of Declarant*

1. I am a founder of Metaphor Computer Systems, ("Metaphor") and I have served as its Chairman, President or Chief Executive Officer since 1983. Metaphor is a wholly-owned subsidiary of International Business Machines Corporation ("IBM") engaged in the development and marketing of application and systems software.

2. Throughout my career at Xerox Corp., Metaphor and IBM, I have been deeply involved in the design, development, analysis and commercialization of products exploiting graphical user interfaces ("GUI").

3. I hold a B.S. degree from the University of Michigan in Electrical Engineering. I hold Masters' degrees in Electrical



Engineering and Systems Engineering, and a Ph.D. in Computer Science, from the University of Toledo. I hold in my own name (or, I am co-inventor) of several letters patent pertaining to graphical hardware and software design.

4. Prior to founding Metaphor in 1982, I spent 10 years at the Xerox Corporation—initially as a research scientist and ultimately as Vice President and General Manager of the Office Systems Division. I was responsible for the planning, development and launch of Xerox's pioneering client/server architecture, including the Ethernet Local Area Network and a computer system known as the "Xerox Star."

5. A "user interface" is the totality of means by which the user and the computer or computer program interact. It includes, for example, the visual screen display output on the system's video monitor, input devices such as a keyboard, mouse or other device, and a set of commands. It also includes a "conceptual model," or abstraction selected by the developer of the software which users can relate to tasks they are performing. A "graphical user interface" (GUI) is a user interface the screen display of which has significant and demonstrable graphical or pictorial elements, such as icons, animation, pallets and the like. The Xerox Star that I helped developed was the first commercial computer system employing a GUI.

6. I have been asked on numerous occasions to present papers or make presentations concerning the design, development and analysis of user interfaces to industry conferences and symposia and to other companies. For example, in March and September of 1989 I made presentations at the Seybold Desktop Publishing Seminars. Those presentations were subsequently summarized and published in a paper entitled *Getting Off The Sandbar*, attached hereto as Exhibit A. Similarly, I was invited to make a tutorial presentation on September 25, 1989 at Agenda '90, which is an exclusive seminar sponsored by Stewart Alsop (publisher of PC Letter) for very senior computer industry executives who meet to dis-

cuss new technology and future directions in the computer industry. That presentation was subsequently summarized and published in a paper entitled *What Makes a Desktop Different*, attached hereto as Exhibit B.

#### B. Importance of This Case

7. I was aware of and familiar with the products at issue in this case well before my personal involvement in the litigation began. Since becoming involved, I have read the declarations of Mitch Kapor and Bernard A. Galler, filed in this case, and I have become familiar with the allegations and claims for relief set forth in Lotus' complaint.

8. This is not, in my view, a "look and feel" case, as was *Lotus v. Paperback*. This case is not about how a software product *looks*; it is about how a software product *works*, and the extent of the concomitant functional monopoly a publisher secures from the relatively modest act of securing a copyright.

9. There is relatively little preclusive effect to software development generally if a publisher holds a monopoly over the way a product looks. On the other hand, there are significant and widespread consequences if a software publisher can prohibit others from publishing their own software that contains, displays and executes the command hierarchy of the first, even in wholly original code, and particularly, if others are precluded from bringing to market software products that execute programs or databases requiring the command hierarchy of the original product.

10. I have been asked to participate as an expert in other highly publicized litigation involving commercially successful software products. Heretofore, I have always refused. I have agreed to participate as an expert for Borland in this case because I believe that if Lotus is successful in asserting copyright infringement against a product that looks demonstrably different from the Lotus product and that interacts

with the user in a demonstrably different way, but which includes a similar or even the same menu command hierarchy, such a result would inhibit software innovation and development and unnecessarily reduce the productivity of application program users.

### C. *User Interface Development at Xerox*

11. Much of my personal experience and reputation with respect to user interface design and commercialization comes from work done by me and by those under my management at Xerox Corporation in the 1970's and early 1980's.

12. Prior to the mid-1970's graphical user interfaces were confined to the largest computer systems and reserved for the most exotic applications—for example, military or other computer-aided design applications. We at Xerox foresaw advancements in computer technology that would, in due course, make more powerful computers readily available to non-experts—for example, to ordinary business people. We therefore set out to amalgamate, analyze and apply known user interface techniques so as to prepare a methodology for the analysis and design of new generations of software programs with user interfaces that could more readily be operated by persons who are not computer experts.

13. In the early 1970's, a great deal of theoretical research and pioneering design work was done at the Palo Alto Research Center (PARC), a research arm of Xerox Corporation, to develop new technology, approaches and models for computer user interfaces. In January of 1975, Xerox founded a new division called the Xerox System Development Division (SDD). The purpose of SDD was to begin to commercialize the ideas and technology that had been developed out of the PARC research. At the time of the founding of SDD, I was a member of the research staff of PARC, and I became the new Manager of Systems Development of SDD.

14. In April of 1976, I hired Charles Irby (now Vice-President of Software Development at Metaphor) to lead a working group at SDD whose mission was to study problems of user interface design for a revolutionary new commercial computer to be marketed by Xerox. Irby's team reported to me and worked under my supervision. I personally attended the early meetings of that group. Much of the fruits of the research at both PARC and SDD was published in scholarly papers, for distribution both inside and outside of Xerox.

15. The PARC work, and later the SDD work, enabled Xerox to produce and enhance a computer known as "Alto." Several application programs were written for the "Alto" that had a user interface that included pop-up menus and windows and employed a "mouse." It was the "Alto" computer that Steve Jobs saw before beginning development of Apple Computer's "LISA" and "Macintosh" computers.

16. Xerox's most widely known product based on the PARC and SDD work was the "Star" (now called "ViewPoint"). The Star was the first product to use "icons" on its screen display. "Icons" in the Star were graphical and pictorial images that represented "objects"—that is, icons expressed complete notions of data and the programs (or processes) associated with them. In addition, the Star was the first product to include animation enabling users to move icons, thereby permitting users to perceive that they could manipulate and organize objects such as documents in a manner reminiscent of the organization of one's desk. These documents could be further organized, in keeping with the desktop metaphor, into "file folders" and "file drawers."

17. To my knowledge, the Star was also the first computer product outside of the typesetting system category to use "what you see is what you get" (abbreviated as "WYSIWYG") correlation between screen display and printout, and was the first product to display compound documents (documents with tables, graphics and text) in WYSIWYG format.



18. Finally, the Star designers implemented what were called "property sheets" at the time. Today, they may be known as pull-down, pop-up, tear-off or other kinds of menus. The Star was the first product in which that sort of display was the fundamental medium for invoking functionality and examining the state of an object.

19. The research at Xerox PARC and SDD spawned a wealth of programs far beyond Xerox products alone—Apple's Macintosh and LISA, Hewlett-Packard's New Wave, Microsoft's Windows, and IBM's Office Vision, to name but a few.

20. Most fundamentally, the PARC and SDD research produced a methodology for user interface design that is based upon a taxonomy or classification for user interface analysis. That taxonomy and methodology continues to be used at Xerox and elsewhere—we use it at Metaphor, for example.

#### D. *The Taxonomy of UI Analysis and Design*

21. As the Xerox research concluded, and as I have stated on numerous occasions in papers and oral presentations, every user interface has three separable components: the user's conceptual model, the control mechanism or command invocation, and the visuals (or "information display").

22. The user's conceptual model is by far the most important of the three user interface components. Indeed, I have estimated that it may be responsible for 60 to 80 percent of the interface's actual usability.

23. The user's conceptual model is the abstraction selected by the software developer which users can relate to the tasks they are trying to do. By invoking a model, the developer is not trying to make the computer program imitate the object being modeled. Rather, the developer is attempting to give users a metaphor which will aid them in employing the program's functionality.

24. The user's conceptual model that underlies both Lotus 1-2-3 and the Borland products is the "spreadsheet"—a collection of cells in spatial relationships that can contain numbers, formulas and cross-references among themselves, as well as, in the case of macros, commands. There are, of course, other metaphors or models that one might invoke for a program to solve numerical problems and manage numerical relationships. In any event, using the spreadsheet metaphor for this purpose is original to neither Lotus nor Borland. It was first adopted by Dan Bricklin in his VisiCalc product, and it made VisiCalc a successful product in spite of the fact that VisiCalc's functionality was wanting and other components of its user interface were primitive or even nonexistent because of the limited displays and power of the computers on which it was originally designed to run.

25. The second most important component of the user interface is the "command invocation" or "control mechanism": the mechanism that enables the user to extract the functionality built into the software. The control mechanism is a "system," by which I mean a set of actions and results defined in particular relationships to one another.

26. Menu items and keystrokes are part of the control mechanism and were clearly identified as such by the Xerox research published in the mid-1970's. Indeed, because interfaces for business applications at this time consisted almost entirely of menu items and keystrokes, the control mechanism component was originally called "Command Language."

27. Over time, developers began to add additional components to the "control mechanism." For example, the control mechanism of the Lotus 1-2-3 product is a keyboard invoked, two-line moving cursor displaying a menu hierarchy two lines at a time, with the first line active and the second line frequently displaying possible future choices, the specific menu items of which hierarchy consist of full words arranged functionally.

28. The "control mechanisms" of the Borland products are dramatically different from that of the Lotus 1-2-3 product. The control mechanism of Quattro Pro, for example, is a mouse-driven, pull-down menu display which lists current active choices and provides an explanation for the chosen function, and which displays all the various command steps by which the user reached the current place in the command hierarchy, but inactive future choices are not displayed. The control mechanism also depicts certain functions by graphical images such as buttons selectable by the mouse, but the images themselves may or may not be part of the control mechanism. Finally, the control mechanism provides for animation for the manipulation of separate spreadsheet documents through the "View" functions on the top-level menu.

29. Many sophisticated user interfaces have a truly separable visual component—images such as icons, for example, that can be manipulated through animation techniques. This component is less important from the standpoint of usability than the other two, but it may be very important for marketing purposes because, at least in some cases, it establishes the vendor's identity with users.

30. As I have repeatedly stated, I believe that every vendor has the right to develop a product identity in the sense of visual displays. Most "look and feel" cases to date, like, for example, *Broderbund Software v. Unison World*, have related only to the visuals of the product and hence implicate product identity as opposed to usability. I believe that the *Lotus v. Paperback* case was one such case in which Paperback's product, VP Planner, wrongly appropriated the very identity of Lotus 1-2-3 to such a degree that a user could mistakenly think he or she was using Lotus 1-2-3, rather than VP Planner. Borland's Quattro and Quattro Pro products, by contrast, do not at all take the identity of Lotus 1-2-3.

31. The separateness of the visuals from the control mechanism and the relatively lesser importance of the visuals vis-a-vis the control mechanism can be illustrated by reference

to the Apple Macintosh screen display. The screen display of the Macintosh includes icons, animation, shading and the like. (See screen shot, Exh. A.) By invoking a function under the "View" menu at the top of the screen that displays objects "by name" as opposed to "by icons", one can eliminate much of the separable visual expression of the Macintosh user interface (screen shot, Exh. B), and yet the program was designed to function and will continue to function just as well. However, if one eliminates the command words from Lotus 1-2-3, or indeed, from the Macintosh, the program would be useless to the user because the menu commands are the very system that the computer program code implements.

32. Release 2.0 of Lotus 1-2-3 has only the most minimal visual component—for example, the inverse highlighting of command terms as the cursor moves and the on-line help text that can be called up by the user for explanation of the commands. However, I have seen advertising and trade industry publication reports regarding Lotus 1-2-3 for Windows and for the Macintosh and it appears that those products do have a separable visual component.

#### E. *Software Development for Small Systems*

33. The development of a new software program is a time-consuming and often expensive task. A generalized description of software and user interface development is set forth in a well known book by Frederick Brooks, Jr., entitled *The Mythical Man-Month*.

34. I have read the Brooks book; indeed, I have it on the bookshelf in my office at Metaphor. At page 20 of his book, Brooks describes the following rule of thumb for scheduling a software development effort:

For some years I have been successfully using the following rule of thumb for scheduling a software task:



1/3 planning, 1/6 coding, 1/4 component test and early system test, 1/4 system test, all components in hand.

This differs from conventional scheduling in several important ways:

1. The fraction devoted to planning is larger than normal. Even so, it is barely enough to produce a detailed and solid specification, and not enough to include research or exploration of totally new techniques.

35. Brooks' analysis was accurate at the time it was written in the early 1970's for large-scale host-based programming projects with extensive programming staff on large mainframes. Nowadays, however, there are many other techniques for breaking a program's development into horizontal layers beyond those proposed by Brooks.

36. Many, if not most, personal computer (PC) programs are not developed and written using the techniques described by Brooks. Personal computer programs, including Lotus 1-2-3, are usually written by much smaller teams than are characteristic of the host-based programming of prior generations. The dynamics of development in the smaller PC teams are much different than described by Brooks. Similarly, personal computer programs often get divided into parts for development purposes and are developed asynchronously rather than sequentially—that is, the various parts of the program are at different stages of refinement at any given time. The Kapor declarations themselves indicate that Lotus 1-2-3 was not developed using the Brooks model.

37. Hence, the Brooks time estimates of various development tasks and particularly the rule of thumb regarding the ratio of time for code vis-a-vis planning functions does not accurately reflect the development of many, if not most, PC programs.

#### F. *Relative Importance of Code and UI*

38. Prof. Galler expresses the opinion in his declaration that most of the time spent in developing a software product relates to specifications rather than coding:

[Coding] is less difficult and requires less creativity and imagination than developing the design in the first place.

First Galler Decl. ¶ 40.

39. Galler then asserts that the user interface is the most important part of the product specification:

Within software specification and design, expression of the user interface is probably the most critical task the application developer faces and that in which the most significant creative activity and effort is expended.

First Galler Decl. ¶ 51.

40. Prof. Galler's assertion that work on the user interface is the portion of software specification and design "in which the most significant creative activity and effort is expended," is simply inaccurate as a generalization. The functional specification of a software product describes what it does on behalf of the user. If the software is highly interactive, the specification will certainly discuss the user interface. If the product is not highly interactive, the specification may still be enormously detailed, but it will not be concerned with the user interface. A program to control the flow of traffic is a good example of a product with an enormously complicated specification, requiring a great deal of creative work to generate, which does not focus at all on user interface issues.

41. Moreover, Galler's assertion with respect to the importance of user interface specification has little if any applicability to the development of Lotus 1-2-3 as described in Mitch Kapor's declarations. The user's conceptual model for Lotus

1-2-3, by far the most significant portion of the interface, comes from VisiCalc. Mitch Kapor's declarations also indicate that much of the control mechanism (*e.g.*, two-line moving cursor) comes from his own early work at VisiCorp on the VisiTrend product. The additional work actually done on the Lotus 1-2-3 user interface at Lotus was merely the identification and organization of command words, which was done at the very end of the development cycle.

42. Most fundamentally, it is imperative to distinguish the value of "coding" to a product (*i.e.*, the act of writing code) as that term is used by Galler (in ¶ 40) from the value of the finished "code" to the product. Even where, as in the Brooks model, the precise step of "coding" is easier or less time consuming than design and specification, that in no way suggests that the resulting code is unimportant or in any way less valuable than the screen display. Indeed, the screen display (*i.e.*, what appears on the screen) is merely the "output" or result of the execution of a portion of the program's code (*i.e.*, the set of instructions written to accomplish a result).

43. Of course, although the screen display is the output of the program, there is no specific or required relationship between the structure of the code and the order of commands on the screen. The same command hierarchy can be generated on the screen from radically different code structures.

44. Portions of the code other than those producing the screen display provide the product's functionality—in this case, the computational functions. The computational code written by Jonathan Sachs contributed enormously to the success of Lotus 1-2-3. That code was written for a new type of computer hardware and it enabled users to run larger spreadsheets far more rapidly than was permitted by VisiCalc.

#### G. "Clones"

45. For purposes of this declaration, I accept Prof. Galler's definition of a "clone"—"a program that imitates another pro-

gram, mimics its behavior and appears identical to it (or virtually so) in external respects, including the user interface." First Galler Decl. ¶ 91.

46. Galler contends (at ¶ 97) that

[e]ven good college students given a sophisticated application program such as Lotus 1-2-3, its documentation and an opportunity to observe its operation, could develop a program that mimics the appearance and most aspects of the behavior of the original.

This is inaccurate.

47. There are many examples from my own experience that illustrate the inaccuracy of Galler's assertion. Steve Jobs saw Xerox's Alto, for example, but it still took many engineers at his company months and months of development, undoubtedly consisting of thousands upon thousands of person-hours, to produce a competing product with a similar visual display—Apple's "LISA". In short, although it is relatively easy to generate a particular non-functioning static screen display, it is very difficult to "mimic the behavior" of a sophisticated product with a sophisticated, interactive screen display that provides robust functionality.

48. Moreover, mimicking the visual appearance of a product without providing the same or similar functionality will not produce an economically viable product nor will it threaten the success of the original product. Again, examples abound. Digital Research, Inc. ("DRI") produced a software product known as "GEM" and Atari produced a computer known as "Amiga," both of which had screen displays virtually identical to that of the Apple Macintosh. Yet neither succeeded economically because neither could reproduce the robust functionality and ease of use of the Macintosh, notwithstanding their similar screen appearance.

49. In any event, it is difficult to understand what Prof. Galler's analysis has to do with the Borland products. What



Galler says about the importance of the user interface obscures the fact that the interface of the Borland products is *not* similar to that of Lotus 1-2-3—indeed, the only elements the Lotus and Borland user interfaces have in common is that the commands of the Lotus 1-2-3 command hierarchy appear at various places in the much larger command hierarchy of the 1-2-3 compatible user interfaces of the Borland products.

50. Furthermore, the Borland products are not “clones” of Lotus in any sense, including under Galler’s definition. As explained below, their screen appearance and their method of interaction with the user are manifestly different, and their behavior and functionality are far more robust, than Lotus 1-2-3. In no sense could Borland, in the creation of the 1-2-3 compatible mode of Quattro or Quattro Pro accomplish the evil that Galler condemns as “cloning”:

by cloning an existing product a developer can avoid almost all aspects of functional specification, much of the detailed design process, and almost all issues in creation of the user interface.

First Galler Decl. ¶ 93.

#### H. *The Role the Words Play in the Lotus 1-2-3 System*

51. The command hierarchy of Lotus 1-2-3—the command words and their order—is a system for performing numerical calculations on a spreadsheet. The command words are a central and inseparable part of the Lotus 1-2-3 command system. These words identify the functional choices available to the user, and the system cannot be used without them. The words are required in order for the user to determine in the first instance the command steps that will accomplish the user’s goal.

52. The command words do not explain to the user how to use the system—they merely identify the functions that are available in the system. To the extent the user needs expla-

nation and education in using the Lotus 1-2-3 system of commands and in making the correct choice of functions to accomplish a task, that explanation is provided by the documentation for the program, by the help screens, by the tutorials Lotus supplies with the program, and to some extent by the long prompts in the second menu line.

53. Sophisticated users of Lotus 1-2-3 often over time become so familiar with the sequences of command steps necessary to accomplish various tasks that they need no longer rely on the words to select the proper steps. Instead, such sophisticated users come to treat the command steps as purely a sequence of keystrokes. For these users, the necessary sequence of commands (and the correlative keystrokes) are merely an automatic stimulus/response sequence that has been learned from intimate familiarity and repeated use of the words of the Lotus 1-2-3 command system.

#### I. *The Importance of The Specific Words And Organization*

54. Galler’s assertions (in ¶ 88 of his First Galler Decl.) that possible variations to the command words of a user interface “are limited only by the resourcefulness of developers and . . . by the constraints of language” is unreasonable. To be useful, each of the words in the command hierarchy of a spreadsheet product must convey to the user the function it identifies. With respect to each command there are a very narrow range of words that can perform this function—for example “copy,” “replicate,” or “duplicate” might serve for the same function. Moreover, shorter, more common words are preferred to enhance recognition and conserve space on the screen.

55. The particular word originally chosen for each function in Lotus 1-2-3 was of no particular importance to users so long as it conveyed the particular function. Lotus 1-2-3 would have been just as successful if it used “replicate” instead of “copy,” or “duplicate” instead of “copy.” Of course, the choice of each word had to be consistent with the design rules

of the product—two words starting with the same first letter could not be present on the same level of the hierarchy.

56. I believe that the specific hierarchical organization of commands adopted by Kapor did not contribute to the success of Lotus 1-2-3. Any functional organization that was as logical and orderly as the one Kapor adopted would have worked just as well, because other aspects of the user interface made the product sufficiently usable to overcome any flaws in the design of the command hierarchy.

#### J. *The Role and Importance of Macros*

57. Although the specific words in the command hierarchy and their specific organization had no particular significance at the time of the development and the initial release of Lotus 1-2-3, the words and their order acquired great commercial significance later because users embedded that system comprised of those words and their order into their own spreadsheet files in the form of macros.

58. I use the term "macro" as defined on page 166 of the Reference Manual for Lotus 1-2-3 Release 2: "A macro is a set of instructions made up of a sequence of keystrokes and commands that you type into a worksheet as cell entries. After you have entered and named the macro, you can invoke it. Whenever you type the macro name, 1-2-3 reads the instructions and performs the specified tasks."

59. Many frequently used macros written by users consist primarily of stored keystroke sequences representing sequences of commands in the menu command hierarchy. However, macros may also contain commands that do not have equivalents in the menu command hierarchy, such as the "/X" commands, which provide certain advanced macro capabilities like branching and customization of menus.

60. People write and use macros for a number of reasons. As stated on page 166 of the Reference Manual for Lotus 1-2-3 Release 2, "Macros are most useful for:

- Automating frequently used 1-2-3 commands
- Typing the same label many times in a worksheet
- Performing a repetitive procedure that requires a series of sequential commands
- Developing a customized worksheet for someone who is not familiar with 1-2-3"

61. Macros are particularly important in corporate environments, as they enable all members of a relevant group to organize and present data in the same way without error or deviation. Frequently in a business environment, spreadsheets containing macros written by one user are distributed to other users, who must be able to execute the macros contained in the spreadsheets given to them.

#### K. *The Role the Words and Their Order Play in Macros*

62. The words of the Lotus 1-2-3 command hierarchy and their order play a central role in the writing and execution of macros. As this Court stated in its opinion in the case of *Lotus Development Corp. v. Paperback Software Int'l*, 740 F. Supp. 37 at 65: "Because macros may contain many menu choices, the exact hierarchy—or structure, sequence and organization—of the menu system is a fundamental part of the functionality of the macros."

63. When a user writes a macro containing Lotus 1-2-3 menu commands, the user stores those commands in the macro according to the word and letter designation and hierarchical order defined by the Lotus 1-2-3 hierarchical menu command system. In writing the macro, the user uses the words in the menus to select the functional steps that will accomplish the result the user desires to accomplish and automate, and then embeds those steps in the macro using the command designations defined by those words and in the order dictated by the hierarchical structure of the menus containing the words.



64. The user may also use the words in the menus to debug the macro in the event that it does not run correctly or produces erroneous results. The user may look to the menus, for example, to determine whether a step is missing in the macro or the steps are not in the proper order as defined by the menu hierarchy.

65. The need to debug macros arises frequently. Macros are often written for a spreadsheet configured in a very specific way. With subsequent use, the configuration of the spreadsheet often gets changed. Even small changes to the spreadsheet, such as the addition of a row or column (a new item in a budget or a new period of time, for example) can make the macro fail to accomplish the desired result. The user must then examine the macro in detail, step by step, to figure out how to modify it to make it work correctly in the new situation.

66. Once written, the macro represents a set of steps defined by the user that must be performed in a particular designated way—that is, according to the word and letter designation and hierarchical order of the Lotus 1-2-3 menu command system. Because the user has stored menu commands in the order dictated by the Lotus 1-2-3 menu command system, in order to run the macro to accomplish the user's intended result, the functional steps stored in the macro must be executed in the particular way defined by that system.

67. Thus, Galler is simply incorrect when he states (at ¶ 129 of the First Galler Decl.),

There is no technical constraint compelling even a spreadsheet program providing the same functionality as 1-2-3 to do so by using the same set of commands . . . .

#### L. *Dissimilarity of Lotus 1-2-3 and Borland Interfaces*

68. The user interface of Lotus 1-2-3 includes the menu hierarchy (the command words and their order), the type of command invocation system (such as pop-up, pull-down, and moving cursor), the long prompts, the help screens, the input mechanisms (such as keyboard and mouse), and other visual aspects of the screen displays produced by the program (such as highlighting of menu items and scrolling down to parts of the spreadsheet not currently visible on the screen).

69. The user interface of Lotus 1-2-3 is very dissimilar—visually, in its physical interaction with the users and in the approach it makes available to the user for solving problems—from the user interface of Quattro Pro in both its native mode and its 1-2-3 compatible mode.

#### M. *Visual Differences*

70. Visual differences between Lotus 1-2-3 and Quattro Pro are readily apparent from the screen shots described in and submitted with the Declaration of Laurie Flesher in this case. I have examined the screen shots and I find them to accurately represent the screens containing the various commands depicted therein. I have also examined the Lotus 1-2-3, Quattro Pro, and Quattro products themselves in forming my opinions.

71. The command invocation system is presented visually to the user in very different ways in the two products because the products are based on entirely different control mechanisms. In Lotus 1-2-3, the command invocation system appears as a set of word commands displayed in a two-line moving cursor format, in which the first line presents "active" choices of functions that the user may currently select, and the second line often presents "non-active" choices that will become available if the user selects the highlighted command on the first line.

72. Quattro Pro uses an entirely different control mechanism. In Quattro Pro, menu commands are presented inside pull down windows. Commands are presented not only as words but also as graphical images—icons, buttons, and scroll bars. These graphical images, which are entirely absent in Lotus 1-2-3, appear as part of the visual display throughout operation of the program. This same mechanism is used in all product “modes”—Quattro Pro native, Quattro, user-defined, and, of course, 1-2-3 compatible modes.

#### N. *Differences in Physical Interaction*

73. Quattro Pro's user interface is also radically different in its physical interaction with the user. The command invocation system of Lotus 1-2-3 is designed so that it can be exercised only through use of the keyboard. Commands are selected either by using the cursor keys to highlight the desired command, then pressing enter, or by typing the first letter of the command on the keyboard.

74. In contrast, Quattro Pro is intended to be used with a mouse, rather than exclusively a keyboard, so different physical actions are done by the user, in conjunction with the different visual methods of display. The user may invoke menu commands in one of two ways with the mouse: (a) by clicking and holding the mouse button on a command word to pull down the menu of subcommands under that command, then “dragging” (sliding) the mouse cursor down the list to the desired command and releasing the button, and (b) by clicking and releasing on the menu to pull its window down, then clicking and releasing on the desired command within the menu. Other functions may be invoked by clicking the mouse on icons, buttons and scroll bars.

#### O. *Differences in Problem Solving Approach Made Available to the User*

75. One of the most significant differences between the user interfaces of Lotus 1-2-3 and Quattro Pro is the differ-

ence in approach each product presents to the user for solving problems. I am informed that Lotus has attached great significance to the fact that the second line of the menu invocation system presents “non-active” commands—in other words, potential choices of next steps and not active functions.

76. The Lotus system is designed in significant part to inform users of what *future* choices will be available to the user for taking the next step after the user selects one of the presently available choices. The long prompts supply this information by listing the subcommands that will become available at the next level of the menu hierarchy if the currently highlighted command term is selected at the present level. Thus, at appropriate points, the Lotus system attempts to aid the user in selecting the proper command sequence by showing the user where that sequence is headed next at a given point in the sequence.

77. Quattro Pro presents a different approach to the user for selecting the proper command sequence. In contrast to Lotus, Quattro Pro does not display the next steps that will become available in the sequence after the current step. Instead, Quattro Pro employs cascading menus that remain on the screen, displaying all *prior* steps to let the user observe the command sequence that lead him to a particular point.

78. The Quattro Pro user judges whether he has taken the correct command sequence by examining where he has been, not where he is headed. This difference in approach presented to the user manifests itself in the long prompts. In contrast to Lotus 1-2-3, the long prompts of Quattro Pro never present next steps to the user. Rather, in every case, they explain the result that will be accomplished if the presently selected command is invoked. It is therefore not surprising that Quattro Pro's long prompts have different words than those of Lotus—they fulfill an entirely different role.



79. Lotus 1-2-3 and Quattro Pro differ in the approaches they present to the user for solving problems in one other significant respect. Quattro Pro displays "state" information in the menus, which shows the current state or setting of various command choices, such as margin width, to assist the user in determining whether the settings are correct or might need to be changed. "State" information is not automatically displayed as part of the Lotus 1-2-3 command hierarchy, and in order to discover state, the user must invoke the command that affects that state or, in some instances, invoke the "State" command.

#### P. *Differences in Command Hierarchy*

80. I have read Galler's assertions in ¶¶ 29 and 33 of his Declaration submitted in this case that the "menu trees" of Lotus 1-2-3 and Quattro Pro in 1-2-3 compatible mode exhibit "an extremely close parallelism" and are "substantially similar"—indeed, even "virtually identical." These assertions are incorrect, as a simple examination of the menu trees of the two respective interfaces reveals.

81. I use "menu tree" as defined by Prof. Galler in ¶ 75 of the First Galler Decl.—namely, a visualization of the hierarchical menu structure as a "tree," with dependent commands "branching" from commands at prior levels.

82. I have examined the printouts of the menu trees of Lotus 1-2-3's interface, Quattro Pro's 1-2-3 compatible interface, and Quattro's 1-2-3 compatible interface, described in and submitted with the Declaration of Laurie Flesher in this case.

83. Because of the vast size of the menu trees of Quattro and Quattro Pro, it was not practical to print them in schematic form. Therefore, the menu trees have been printed in columns of a spreadsheet in which columns to the right of another column contain commands "lower" in the tree than the command in the column to the left. I find that these print-

outs faithfully set forth and compare the menu trees of the respective products they portray, and accurately illustrate the vast differences in the various command structures.

84. The spreadsheet printouts quite readily reveal the vast dissimilarities in the menu trees of the products. The Lotus 1-2-3 menu tree contains 469 commands. The menu tree of Quattro Pro's 1-2-3 compatible interface contains 5215 commands, a ratio of 11 to 1 more commands. Although each of the 469 commands of Lotus 1-2-3 may be found somewhere within the menu tree of Quattro Pro's 1-2-3 compatible interface, such commands are interspersed at all levels throughout the 5215 commands of the menu tree of the 1-2-3 compatible interface.

85. There is not a single level of the hierarchy in which the Quattro Pro 1-2-3 compatible command hierarchy is the same as the Lotus 1-2-3 hierarchy, including the topmost level. Significant differences in the menu trees of the two interfaces exist at all levels.

86. Because of these differences in the command hierarchies, there is no screen comparison of the interface of Lotus 1-2-3 and Quattro Pro's 1-2-3 compatible interface that would reveal identity in visual presentation or even in command names in any screen at any point in the hierarchy.

87. The huge number of new commands in the Quattro Pro menu trees are not merely extra choices that have been tacked on to the Lotus 1-2-3 menu tree. Rather, these new functions in Quattro Pro interact with the other elements of the user interface so as to create an entirely different visual perception and physical response by the user, and a different way in which the user interacts with the spreadsheet to get work done.

88. For example, the "View" menu included in the topmost level of the Quattro Pro 1-2-3 compatible menu hierarchy allows the user to change the basic model of presentation of the program—from a full screen single spreadsheet (which is

all that is available in Lotus 1-2-3) to a presentation in which multiple spreadsheets can be stacked one on top of another like physical spreadsheets laid out on a desktop, or "tiled" together in a tiling pattern, with edges of adjacent spreadsheets touching one another. The commands within the View menu allow the user to change the appearance and physical interaction with the elements on the screen in the following ways:

- To choose between a "stacked" or "tiled" presentation of spreadsheets
- To pick which of multiple open spreadsheets is to be the "active" one (the one that the user is currently manipulating)
- To "zoom" the currently active spreadsheet to full screen size
- To change the size or position of the active spreadsheet on the screen

89. Moreover, the WINDOW subcommands under the WORKSHEET menu allow the user to change the appearance and physical interaction with the elements on the screen in the following ways, among others:

- To remove the column and row borders from the screen
- To condense the spreadsheet display into a "map view" consisting of columns that are one-character wide and that contain, in place of data, codes that indicate the type of data in each cell.

90. Similarly, the DISPLAY MODE command of the Quattro Pro 1-2-3 compatible interface also enables the user to change many fundamental aspects of the visual presentation of the interface. The user can elect to have the information displayed on the screen in either "character" mode (in which only standard textual letters and characters can be displayed in an arrangement of 25 rows by 80 columns) or in "graphics" mode. In graphics mode, Quattro Pro makes the following display changes:

- If the user has a mouse, the cell pointer will be displayed as an arrowhead rather than as a block.

- If a graph is inserted in the spreadsheet, the user can see the actual graph on the screen when function key 10 is pressed (in character mode, inserted graphs are indicated only by highlighting to show where the graph will appear when printed)

- Some menus will be displayed as "galleries"—depiction of options (such as graph types) as graphical representations rather than words

- The elements of the display appear in finer resolution, and the mouse cursor movements are much smoother on the screen.

91. In sum, the new functionality available through Quattro Pro's 1-2-3 compatible interface not only produces a different visual display, it greatly alters the way the user can interact with the program.

#### Q. *Differences in Quattro*

92. Much of the analysis and conclusions I have described with respect the user interfaces of Quattro Pro also apply to Quattro.

93. Quattro used yet a different command invocation mechanism—"pop up" menus. But, like Quattro Pro, Quattro does not show the user where he is "headed" by displaying the next steps in the sequence of commands that will become available if the currently selected command is invoked. Instead, it presents purely "present" command choice information, displaying at any given time only a single pop up menu showing the presently available "active" commands.

94. Like Quattro Pro, the long prompts of Quattro are purely explanatory of the current active function choices. And, again as in the case of Quattro Pro, Quattro provided other explanatory aspects in its interface, such as help screens



and current state information—all of which are either different from Lotus 1-2-3 (as in the case of help screens) or have no correlative in Lotus 1-2-3 (as in the case of state information).

95. With respect to the menu hierarchy, the menu tree of Quattro's 1-2-3 compatible interface contains 3370 commands, compared to 469 commands in the Lotus 1-2-3 menu tree—a ratio of 7 to 1 more commands. Although each of the 469 commands of Lotus 1-2-3 may be found somewhere within the menu tree of Quattro's 1-2-3 compatible interface, such commands are interspersed at all levels throughout the 3370 commands of the menu tree of the 1-2-3 compatible interface. There is not a single level of the hierarchy in which the Quattro 1-2-3 compatible command hierarchy is the same as the Lotus 1-2-3 hierarchy, including the topmost level. Significant differences in the menu trees of the two interfaces exist at all levels.

R. *The Role of the Native Interface and the 1-2-3 Compatible Interface*

96. It is difficult to imagine that users will find the 1-2-3 compatible interfaces easy to use for anything other than writing, debugging or executing macros. When all the enhanced functionality of the Borland product is added at various points in the 1-2-3 compatible interface, the 1-2-3 compatible interface becomes awkward, difficult and inefficient to use as a system for solving numerical problems.

97. Such awkwardness and inefficiency results principally for two reasons. First, addition of new functions into the existing Lotus 1-2-3 command hierarchy often effectively changes the meaning of existing menus, as illustrated by the additions to the Lotus WORKSHEET menu in the 1-2-3 compatible interface. Second, such additions often cause confusion as to where to look for the functionality residing in previously existing menus, as illustrated by Borland's new VIEW menu.

98. Because Lotus 1-2-3 was designed with two-line moving cursor menus, in which commands are arranged horizontally across the screen, the number of commands that can be placed in any given menu is limited by the width of the screen to about ten. As a result of this constraint, the designers of the Lotus 1-2-3 menus were forced to group commands together under a limited number of top level menus. Accordingly, the WORKSHEET top level menu was created to group together a number of miscellaneous commands that, although very diverse in their functionality, affected the entire worksheet.

99. Because much of the new functionality of Borland's Quattro and Quattro Pro products has no correlative in Lotus 1-2-3, such functionality does not really fit well within any of the Lotus 1-2-3 top level menu categories. Nevertheless, because screen width limitations severely limit the addition of new top level menus, the new functionality had for the most part to be placed somewhere within the existing Lotus 1-2-3 top level menus. In particular, much of the new functionality had to be put in the WORKSHEET menu, because that is the only top level Lotus menu akin to a "Miscellaneous" category—all other top level Lotus 1-2-3 menus relate to very specific types of functionality, such as COPY, MOVE, FILE, PRINT and the like.

100. The addition of the new Borland functionality to the WORKSHEET menu changes substantially the meaning of that menu. Previously, it grouped together diverse functions that all related to entering data into, editing and styling the spreadsheet itself. Many of the new Borland functions that were added to this menu, however, are not of this type—such as UNDO and MACRO commands. Thus, the presence of the new Borland functions in the WORKSHEET menu effectively changes its meaning from a category of "WORKSHEET" functions to a category of "OTHER" functions. The user now is unsure of what types of "other" functions that menu contains, which breeds inefficiency and awkwardness in looking for functions.

101. A second illustration of the awkwardness and inefficiency that results from addition of substantial new functionality to the Lotus 1-2-3 command hierarchy is the new VIEW menu. The VIEW menu commands allow the user to see and manipulate multiple spreadsheets on the screen simultaneously. Lotus 1-2-3 has a WORKSHEET WINDOW menu, which contains commands that allow the user to split a single worksheet into two parts and view the parts simultaneously. Because the WORKSHEET WINDOW menu commands all affect only a single worksheet, that menu did not easily accommodate the new VIEW commands, which affect multiple worksheets.

102. Accordingly, Borland created a new menu titled "VIEW" at the topmost level of the 1-2-3 compatible command hierarchy. Because this new menu is at the topmost level, it is apt to confuse the user as to where to look for the old functionality. In particular, I would expect that many users will be misled to look for the old WORKSHEET WINDOW functions in the VIEW menu, rather than in their original location in the Lotus 1-2-3 hierarchy.

103. In sum, users will find it awkward to access the new functionality of the Borland products, as well as the original Lotus 1-2-3 functionality, through the 1-2-3 compatible interface.

#### S. *Microsoft Excel*

104. In the First Galler Decl., Prof. Galler devotes 16 full paragraphs (§§ 172-187) to a discussion of Microsoft's Excel, asserting that Excel has functionality comparable to that of Lotus 1-2-3 "but with a user interface reflecting a significantly different approach to the spreadsheet" (§ 172).

105. Most of the distinctions that Galler finds between Lotus 1-2-3 and Excel apply equally to the "native" mode of Borland's products. Thus, both Excel and Quattro Pro use pull-down menus (First Galler Decl. § 175), both have a menu

hierarchy, the "content, structure and organization" of which is dissimilar from Lotus 1-2-3 (*id.* § 176), and the "long prompts" are different in both and fulfill a function different from the long prompts of Lotus 1-2-3 (*id.* §§ 177-78).

106. In the current version of Excel (Version 3.0) the "native mode" of that product continues to use pull-down menus with a command hierarchy different from that of Lotus 1-2-3. However, like Quattro Pro, Excel has adopted a Lotus 1-2-3 compatible mode which the user can invoke. In this compatible mode, the Lotus 1-2-3 command hierarchy is displayed on the screen (when called up through the Help facility by pressing the "/" key) and each command can be executed using the same keystrokes as in Lotus 1-2-3.

107. Hence, to the extent that Galler believes that Excel uses "a very different model or approach to the solution of spreadsheet problems" (*id.* § 188), that approach is now identical to that of Quattro Pro.

#### T. *Legal Protection for Command Hierarchies*

108. It is my understanding that, generally speaking, patents can be secured in appropriate circumstances to preclude a competitor from making products that users can operate in a manner similar to the product on which patent protection is obtained. I am also informed that copyright protection is relatively easy to secure, while patent protection is, generally speaking, far more difficult to obtain.

109. I have been involved in the computer industry for more than 20 years and I have held positions in software design, product development and management of a number of the industry's leading companies. Based on my experience, I believe that extending copyright protection to the command words and their order in a program like Lotus 1-2-3 will not promote investment, innovation, creativity or competition in the software industry generally or with respect to spreadsheet products specifically. To the contrary, extending easily obtain-



able monopoly-like protection will do nothing more than enable the first company that establishes a widely successful product having a particular set of ordered command words to lock users into that company as the sole source of that type of product.

110. Because a substantial base of users may be tied to the use of a particular system of ordered words, in order to run existing macros or to make use of learned keystrokes to invoke functionality, permitting a company to monopolize a particular order of commands will enable it to effectively shut out competition from other companies that might provide superior products to that same base of users.

111. Generally speaking, protection of the control mechanism of a software product, including its command language, has significant preclusive effects. Competitors must create new control mechanisms and convince users both to learn new ways to operate similar products and to reorganize their existing data to accommodate the new systems. In addition, competitors must convince corporate users to tolerate the inefficiency and potential for error inherent in exposing employees to different systems that are intended to accomplish similar functions.

112. I believe that before a monopoly of this type is conferred on a developer, his or her contribution to furthering the art should be very significant, far more significant than I am told is required to secure a copyright. This is not to say that monopolies on particular control systems should not be granted, but rather that such a monopoly ought to be relatively difficult to obtain—more in line with the patent procedure, as I understand it.

113. Conversely, protecting the separable visual features of a software product has lesser and far different preclusive effects. Protecting the separable visual features of a product allows the developer to create an identifiable product identity, to appeal to potential users through aesthetics and, in many

cases, through ease of use. Such protection precludes competitors from trading off of the identity of another which was acquired through investment in marketing as well as product development, but does not require users to suffer the inefficiencies of gratuitously different competing systems. Such protection is more consistent with the relative ease of securing a copyright, as I understand it.

I declare that the foregoing is true and correct, and that I have personal knowledge of the matters set forth above. If called as a witness, I could and would competently so testify.

Executed under penalty of perjury under the laws of the United States this 27th day of September 1991 at Mountain View, California.

/s/ DAVID E. LIDDLE  
David E. Liddle

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

Civil Action No. 90-11662-K

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LOTUS DEVELOPMENT CORPORATION,  
*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.,  
*Defendant.*

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DECLARATION OF JIM P. MANZI

I, Jim P. Manzi, hereby declare:

1. I am the President, Chairman and Chief Executive Officer of Lotus Development Corporation ("Lotus"). I have personal knowledge of the facts set forth herein. I submit this declaration in support of the Motion for Summary Judgment of Lotus and in opposition to the Cross-Motion for Summary Judgment of Borland International, Inc. ("Borland").

2. As I have previously testified at deposition, from the summer of 1979 until May 1983 I was a consultant with McKinsey and Company ("McKinsey") in New York City.

3. In that capacity, I directed a management study for Lotus prior to the introduction of Lotus 1-2-3. I began the assignment in November 1982 and completed it early in February 1983. While conducting that study, I had an office and was regularly at Lotus' Cambridge, Massachusetts offices.

\* \* \*

9. Contrary to his Declaration, he was not responsible for planning and implementing the initial marketing plan for Lotus 1-2-3, which was handled by Mr. Kapor, Chris Morgan and others. (I also seriously doubt that Mr. Raburn actually conducted the 150 product demonstrations he claimed in his Declaration between November 1982 and January 1983—over 50 per month.)

10. In his Declaration, Mr. Raburn mentions a software distribution agreement that he says he "successfully negotiated" on behalf of Lotus with Softsel Corporation, a large software distributor. Although it is true that Mr. Raburn negotiated that agreement, it was not a "successful" transaction from Lotus' perspective. The terms of that agreement were so unfavorable to Lotus that one of my first responsibilities when I joined Lotus in May 1983 was to negotiate a termination of that agreement, which I did.

11. Mr. Raburn's brief tenure at Lotus was marked by conflict with Lotus' founder and then President, Mitchell D. Kapor, and the rest of the staff, including Marv Goldschmitt. In fact, one of my duties while at Lotus as a consultant was to attempt to solve this problem, which arose primarily due to a fundamental disagreement about Mr. Raburn's role at Lotus and his management style. I was not able to resolve these differences adequately, and Mr. Raburn never did become an integral part of the Lotus management team.

12. Due to what were described as "differences in operating philosophy", Mr. Raburn resigned on February 11, 1983, less than one month after Lotus 1-2-3 was first shipped. Based on what I know and observed of Mr. Raburn and of his activities and responsibilities at Lotus, I do not believe Mr. Raburn has any first hand knowledge that would permit him to express the views he does in his Declaration concerning what factors did or did not contribute to the eventual success of Lotus 1-2-3. He simply was not there.



# RESPONSE TO THE DECLARATION OF MARV GOLDSCHMITT

13. I have read the Declaration submitted by former Lotus employee Marv Goldschmitt in this lawsuit. I have also reviewed portions of the employment file of Mr. Goldschmitt.

14. According to Lotus' records, Mr. Goldschmitt joined Lotus on August 2, 1982, as a Product Marketing Manager. I understood him to be an acquaintance of Mr. Kapor's. In February 1983, he became the Director of Product Marketing for 1-2-3. He held that position for less than four months, until June 1, 1983, when he became the Vice-President for Business Development, which was essentially a staff position without any direct operating responsibility. At that point he ceased to have any direct responsibility for Lotus 1-2-3. He remained in that position until his resignation from Lotus in November 1985.

15. During his tenure at Lotus, I had an opportunity to work with and observe Mr. Goldschmitt on a regular basis. Eventually, Mr. Goldschmitt reported directly to me in my capacity as President and Chief Operating Officer. In fact, within one month of my joining Lotus in May 1983, Mr. Goldschmitt was having great difficulty performing his duties and I was given the jobs of extricating him from his assignments as quickly as possible—beginning with the marketing of Lotus 1-2-3.

16. I am aware of no studies or surveys at Lotus conducted by Mr. Goldschmitt which analyzed the contribution of the 1-2-3 user interface, and/or its menu commands and structure, to the commercial success of Lotus 1-2-3. The only study he was involved with at the time was one conducted by the Gartner Group and completed in June 1983, which reviewed Lotus 1-2-3 and its competitors and addressed their respective strengths and weaknesses. (Attached hereto as Exhibit A.) That study did not purport to measure why users purchased the product. It did, however, in evaluating Lotus 1-2-3's com-

petitive strengths and weaknesses, give 1-2-3 high marks for ease of use, learning time, design and human factors—all of which relate to the quality of the menus and user interface. After Mr. Goldschmitt became Vice-President for Business Development in June 1983, his responsibilities did not include any activity that would have involved such a study.

17. Contrary to Mr. Goldschmitt's assertions, Lotus' original advertising campaign placed great emphasis on its user interface stating, among other things, that Lotus "1-2-3's spreadsheet is easy to learn and use," and that "You simply choose your task from a 'menu' that's written in English." (Attached hereto as Exhibit B, at 46708, 46714.)

18. During his years at Lotus, I observed that Mr. Goldschmitt had an increasingly poor working relationship with Mr. Kapor, which left him increasingly isolated within Lotus and ultimately resulted in his resignation in November 1985.

19. Contrary to Mr. Goldschmitt's Declaration, I do not recall ever having a discussion (informal or not) with him concerning whether Lotus should institute legal action against Mosaic Software, Inc. or Paperback Software, Inc., or any other software manufacturer for that matter.

20. Based on what I know and observed of Mr. Goldschmitt and of his activities and responsibilities at Lotus, I do not believe Mr. Goldschmitt has any first hand knowledge that would permit him to express the views he does in his Declaration concerning what factors did or did not contribute to the success of Lotus 1-2-3.

21. Over the past nine years I have been intimately involved in the marketing of Lotus 1-2-3, in capacities ranging from consultant to Chairman and CEO. Contrary to the conclusions Messrs. Goldschmitt and Raburn claim to have reached based on their relatively brief and limited associations with Lotus, it is my view, based on my experience, that the 1-2-3 user interface has been a key to the product's extraordinary and enduring popularity.

22. As I testified at my deposition, the intuitiveness, simplicity and elegance of the menu commands and structure have contributed significantly to that success. Millions of users have become familiar with our menus, and we value that familiarity highly. Over the years I have seen ample evidence of the importance to 1-2-3 users of the user interface in their decisions to purchase, and to continue to use, Lotus 1-2-3.

23. During the period when Lotus owned Lotus Magazine, it was published by Lotus Publishing Corporation ("Lotus Publishing"), a wholly-owned subsidiary of Lotus. Although I was ultimately responsible for the overall success of Lotus Publishing as a business enterprise, on an operational and management level the subsidiary functioned independently from the parent company. In fact, we carefully maintained the arm's-length status of Lotus Publishing to preserve both its eligibility for publishers' postal rates and its credibility as an objective source of information. From 1987 through June 1990, management of Lotus did not exercise control over the editorial decisions of Lotus Publishing, or screen or review for approval any advertising that Lotus Magazine carried.

24. Attached hereto as Exhibit C is a letter I received on or about February 3, 1987, from one Julian Lange on the letterhead of Ontio Computer Products Corp.

I declare under penalty of perjury that the foregoing is true and correct.

Executed at Cambridge, Massachusetts this 1st day of November, 1991.

/s/ JIM P. MANZI  
Jim P. Manzi

#### CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing was served upon counsel of record for the defendant herein by overnight courier on November 1, 1991.

/s/ PAUL M. O'CONNER, III  
Paul M. O'Conner, III



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UNITED STATES DISTRICT COURT  
CENTRAL DISTRICT OF CALIFORNIA

No. CV 82-5946 KN (Mcx)

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EVERGREEN CONSULTING, INC., a corporation,

*Claimant,*

—vs.—

NCR COMTEN, INC., a corporation,

*Defendants.*

---

INTERNATIONAL BUSINESS  
MACHINES CORPORATION, a corporation,

Plaintiff,

—vs.—

NCR COMTEN, INC., a corporation,  
and NCR CORPORATION, a corporation.

Defendants.

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# DECLARATION OF ARTHUR R. MILLER

Arthur R. Miller, declares under penalty of perjury pursuant to 28 U.S.C. § 1746, as follows:

1. I am currently a professor of law at Harvard Law School. I have been a law school professor for twenty-three years, (23), previously holding full time teaching positions at the University of Michigan Law School and the University of Minnesota Law School.

2. During the twenty-three (23) years I have been a law school professor, I have taught courses on copyright, unfair competition and intellectual property at each of the law schools where I have worked. I have also conducted many seminars for judges and lawyers on copyright and intellectual property matters, as well as on civil procedure. At Harvard and at the University of Michigan, I have conducted seminars on computers and the law.

3. I was an active participant in the debates, hearings and negotiations that led to the enactment of the Copyright Act of 1976. I was intimately involved in the legislative process as it related to educational usage of copyrighted materials and the implications of computer and photoduplication technologies on copyright.

4. In 1975, I was appointed by President Ford as a Commissioner on the National Commission On New Technological Uses Of Copyrighted Works ("CONTU"). Together with Justice Stanley H. Fuld and Commissioner E. Gabriel Perle, I served on the Software Subcommittee of CONTU. The Software Subcommittee particularly studied various aspects of the relationship between computer software and copyright and had the primary responsibility for the preparation of that part of the CONTU Final Report dealing with computer programs.

5. In 1983, I was active in the legislative process which developed a bill relating to the protection of semiconductor chips and masks, and which eventuated in the 1984 statute protecting those items. In particular, I appeared as a witness before the subcommittee on patents, copyrights and trademarks of the Senate Judiciary Committee.

6. I am currently serving as the standby arbitrator in the computer-copyright dispute between Apple Computer and Franklin Computer involving the infringement of software. I was named to that position by the parties pursuant to the settlement of the case following the decision by the United States Court of Appeals for the Third Circuit.

7. I have also served as a consultant to several litigants in various copyright matters, and to private institutions on copyright matters. In particular, I have advised on matters relating to the work of CONTU and on questions of copyright protection in general. I make this declaration based on my experience with CONTU and my expertise and experience in the copyright law generally.

8. I have been consulted by attorneys representing NCR Comten, Inc. and NCR Corporation in their litigation against IBM. I have read the Declaration of Arthur J. Levine dated July 9, 1984, which I understand was submitted by NCR Comten, Inc. and NCR Corporation in this action. Mr. Levine was the Executive Director of CONTU and was fully familiar with its activities and intent. Based on his experience with

copyright law, and my contact with him at CONTU, I believe he is a recognized expert on copyright law. I agree with the statements made by Mr. Levine in his Declaration of July 9, 1984.

9. In considering the appropriateness of copyright protection for computer software as a member of CONTU, I was particularly concerned, as were most of the other members of the Commission, that copyright should not block anyone from developing their own software, even if that software were to perform the same function as pre-existing software and were to accomplish it in the same way. There was a great concern about not allowing the copyright monopoly to be used to inhibit people from developing the art of programming or to prevent the maximum utilization of information technology for the widest range of uses and users.

10. The entire purpose of my questioning of Daniel D. McCracken at a CONTU hearing was to be sure that programmers were not seeking protection at a level that would damage the social utility of programs or of technology. Thus, I asked Mr. McCracken whether he sought protection of "the intellectual juice" from the program, and Mr. McCracken responded that he would like to have that degree of protection, but that the second comer in that instance would not be taking the expression because of the amount of work required. He likened the program to a play, indicating the dialogue is what should be protected by copyright. The following discussion involving myself, Commissioner Nimmer and Mr. McCracken occurred in CONTU session 10:

COMMISSIONER MILLER: Could I now circle you back. When we were talking about protection, you listed the example of Chinese copying and use. But given the cost of production of one of these major programs, do you or don't you think that it is necessary to protect against not the literal photocopyist, but the person who sits down either with the source or the object listing,



studies it and says, 'Aha, I see how this person with these people invested a million dollars and came up with ideas 1 through N, and now I am going to go out and produce my own program to achieve the same result with some twist or wiggles and bumps and valleys, but basically having gotten all the intellectual juice out of that million dollar investment.

MR. MCCracken: I would very much like to respond to that. That is an important question. As you may have detected by now, I am a bit of a moralist I don't like thievery, and I would prefer protection against that, too, but in practice that is not really a very big problem, because that second guy has a lot of work to do. He is almost going to deserve what he gets. If you will permit me to tell a very short story. Moss Hart in his autobiography, 'Act One', told about the stupidest thing he ever heard anybody saying about writing a play. He ran into a young playwright at a cocktail party who was known to be working on a play and asked him how it was going. He said, 'Well, I am almost done. All I have to do now is dialogue it.' He said it was the stupidest thing ever because the dialogue is the essence of the play. Until you have done that you do not have a play. You have the idea of a play.

John Hersey said here before, it is an unusual author that can get along on an outline. Some people can, but not very many. If you have the idea of a program, even some very clever idea, you still have a long, long way to go before that is a running reliable product. The original coding, writing the source codes down on sheets of paper, or whatever, is no more than ten or twenty percent of the total cost of writing a program. The rest of it is in designing, how it is going to work and the checking it out, establishing that it works, getting the errors out. So that second guy, picking this up and saying, 'I see how a compiler works,' or something, in the first place he has

a lot of work to do just to understand it, and then he sits down and writes his own, he may spend nearly as much as the original.

Compilers aren't new. In a sense everybody does them. Somebody else sits down to write another compiler from scratch, having read the source code from this, he would still spend about the same amount of money.

COMMISSIONER NIMMER: In focusing on trying to find what is the idea of the program which is unprotected, if we look at conventional copy records the expression may be short of the literal Chinese copy. Take a motion picture based upon a novel, it would be ridiculous to say that because you have motion picture rights on the novel that the work is done. But nevertheless, the one who makes a motion picture based upon a novel without the consent of the novelist is infringing the novel, because you are taking more than the idea. The mere fact that additional work is needed is not necessarily the answer if we look at conventional copyright principles. Maybe in this context we should think that the protection only goes to the literal protection.

11. The members of CONTU did not specifically adopt Professor Nimmer's "literal protection" or "Chinese copy" limitation, but did consider that limitation to be one of the basic goals to copyright protection of software. In listing the "variety of ways" a computer program can be misappropriated in the CONTU Final Report, all the ways involved verbatim copying. The examples given include photocopying, recording of the program on tape and copying the program into the memory of the computer. If anything beyond these uses were to be considered infringement, that determination was to be made by the courts on a case-by-case basis.

12. Ultimately, CONTU adopted the principle that copyright should not be used to block the development of new pro-

grams, specifically stating that as one of the objectives of the proposed legislation. The Final Report stated the objectives at p. 12:

To provide reasonable protection for proprietors without unduly burdening users of programs and the general public, the following statements concerning program copyright ought to be true:

1. Copyright should proscribe the unauthorized copying of these works.
2. Copyright should in no way inhibit the rightful use of these works.
3. Copyright should not block the development and dissemination of these works.
4. Copyright should not grant anyone more economic power than is necessary to achieve the incentive to create.

13. To illustrate CONTU's concern that copyright not be used to block the development of other software, or the utilization of the technology, an analogy can be drawn to the experience of two people seeing a baseball game for the first time, and having to describe that baseball game. Because some of the same things must happen in every baseball game, and in the same sequence, the structure of what two people write in describing baseball will necessarily have similarity. For example, before the game starts, the National Anthem is played. The home team is always on the field at the start of the game, and the pitcher must throw to each batter in turn. The definition of what is a hit, a home run, a foul ball or an out does not alter and will be the same for anyone. Similarly, after three outs are made, the teams change sides with the visiting team going to the field and the home team coming to bat. This time, play again begins with the pitcher for the visiting team throwing to the plate. To phrase it simply, describing such a game is a constrained process, with the constraints

being introduced by the nature of the subject matter involved. Copyright should not be used by the first writer of the rules of baseball—its program if you will—to block other authors in writing a second description of the game. And most assuredly, a copyright in the description of baseball cannot be permitted to inhibit anyone's playing the game—practicing the technology of baseball, as it were.

14. The members of CONTU were also concerned that copyright protection for software not create a patent-like monopoly in the guise of copyright. The danger of such a monopoly arising was perceived as acute because of possible antipathy to one person using someone else's ideas. It was, however, strongly felt that this type of protection, which various commissioners occasionally referred to as "anti rip-off," was not appropriate for copyright. The members of CONTU believed that if ideas were to be protected, that protection would have to be under the patent law or trade secret law.

15. In addition to considering patent and copyright protection for software, many CONTU debates focussed on whether there should be protection against misappropriation of a program, that is the taking of the essence or intellectual idea of the program. The conclusion reached was that any such misappropriation protection would have to be separate from the Copyright Act, which protected only the expression of the program. Although the design or logic of the program might represent a major part of the intellectual effort or value of the program, that part is not protected by copyright.

16. I have read the Declarations of Melville B. Nimmer and John A. Baumgarten, submitted by IBM in this action. These Declarations need some amplification or clarification to present more completely the views of the members of CONTU on protection of computer software. Some specific clarification and amplification is also needed so that the statements of Professor Nimmer and Mr. Baumgarten not be misunderstood. Generally, in Paragraph 8 through 13 of this Declaration I have tried to amplify and show the concerns of



the members of CONTU in recommending copyright as a way to protect the expression of computer programs.

17. In particular, Professor Nimmer and Mr. Baumgarten repeatedly state that the scope of protection for computer programs is the same generally as that for other categories of literary works, and specifically list novels, plays and directories as other examples of literary work. That statement, however, only begins the analysis of what is the scope of protection afforded by copyright. Stated simply, the different types of literary works, including novels, plays and directories, do not have the same scope of protection. It has long been recognized that literary works of fiction enjoy a broad scope of protection, often extending to matters such as theme and plot, while nonfiction works have a very narrow range of protection, often limited to verbatim copying or very close paraphrasing. Facts, themselves, are not subject to copyright. One of the most recent examples of this distinction in the scope of protection between fiction and nonfiction literary works is shown in *Landsberg v. Scrabble Crossword Game Players, Inc.*, 736 F. 2d 475 (9th Cir. 1984). The court there considered a book setting forth a strategy for playing Scrabble Crossword Game. The rules or suggestions for better play were, of course, nonfiction. The Court held the game-playing strategy could be protected only against verbatim copying or very close paraphrasing. In my opinion, a computer program is certainly a nonfiction work in the same sense that a strategy for playing the Scrabble game or the rules for playing baseball is a nonfiction work. The games and the software programs are all constrained by the required rules.

18. I have also considered the statements in the Declarations of Professor Nimmer and Mr. Baumgarten respecting copyright protection for names and short phrases. Although they both recognize that names and short phrases are not ordinarily copyrightable subject matter, the claim is made that if these names or short phrases are included in a compilation they are protectible, and the decision by Judge Learned Hand

in *Reiss v. National Quotation Bureau*, 276 Fed. 717, 719 (S.D.N.Y. 1921), is cited as support for that position. I certainly agree that compilations may be protectable, but clarification is needed if the statements are to be properly considered. Although names and short phrases in a compilation may be protectible as part of the compilation, what copyright protects in the compilation is the collection and assembling of pre-existing materials or of data that is selected, coordinated and arranged. Copyright does not protect individual names or short phrases simply because they are included in a compilation. That would amount to the kind of blockage prohibited by 17 U.S.C. § 102(b) and feared by the members of CONTU.

19. I do not believe that a computer program is a compilation, so the principles respecting protection for compilations would have no application. A computer program does not collect and assemble pre-existing materials. If particular names and short phrases could be protected simply because they appear in a computer program, the same principle would certainly apply to fiction and you would reach the ridiculous stage of having the copyright on *Gone With The Wind* preclude others from using the words "gone," "wind," "frankly" and "damn" because they are part of the "compilation of words" called *Gone With The Wind*.

20. The *Reiss* case cited by Professor Nimmer and Mr. Baumgarten simply dealt with the issue of whether a code book consisting of 6,325 coined five-letter words was copyrightable. Nowhere did Judge Hand suggest that any individual word or name is copyrightable nor did he make any finding as to the scope of protection for those coined words. The *Reiss* case was cited in the CONTU Final Report for two separate purposes, namely: (1) to show the broad interpretation the courts have given to the term "writings" in the Constitution; and (2) for the proposition that copyrightable works do not necessarily have to communicate with human beings.

It was not cited to indicate that protection was to be extended to names or short phrases.

21. The reason, aside from lack of creativity, that names and short phrases are not accorded protection is very simple. To return to my baseball analogy, the round tapered log which is used as a striking tool in baseball is called a "bat;" the fabric covered spheroid that is struck by the striking weapon is called a "baseball;" and the square pillow shaped devices that rest at three points on the playing field are called "bases." For anybody to write about the game of baseball and inform the reader of what he is saying he must necessarily use the words "ball," "bat" and "base" as well as dozens of other non-appropriate elements, to describe what is taking place. Thus, even if those names were original and creative, they would not be a proper subject of copyright protection. Similarly, names used in a computer program are not a proper subject of copyright protection.

Executed at Cambridge, MA this 3d day of January, 1985.

/s/ ARTHUR R. MILLER  
Arthur R. Miller

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UNITED STATES DISTRICT COURT  
CENTRAL DISTRICT OF CALIFORNIA

No. CV 82-5946 KN (Mcx)  
June 24, 1985

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EVERGREEN CONSULTING, INC., a corporation,

Claimant,

—vs.—



NCR COMTEN, INC., a corporation,  
and NCR CORPORATION, a corporation,  
Defendants.

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INTERNATIONAL BUSINESS  
MACHINES CORPORATION, a corporation,  
Plaintiff,  
vs.

NCR COMTEN, INC., a corporation,  
and NCR CORPORATION, a corporation,  
Defendants.

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SECOND DECLARATION OF ARTHUR R. MILLER  
(IN SUPPORT OF NCR COMTEN'S MOTION FOR  
SUMMARY JUDGMENT AS TO COUNT I  
(INFRINGEMENT OF COPYRIGHTED PROGRAMS)  
OF IBM'S FIRST AMENDED COMPLAINT)

I, Arthur R. Miller, declare upon penalty of perjury, pursuant to 28 U.S.C. §1746, as follows:

1. I have been asked to supplement my first declaration in this proceeding, dated January 3, 1985, in order to consider the significance of the Patent law's treatment of computer program logic to the question of whether the use of that logic based upon a study of the program's language (e.g., source code) is a matter that Congress intended to be prohibited by the Copyright Act. In my opinion, this question must be answered in the negative.

2. In considering this issue, it is important to recognize the very distinct spheres of responsibility of the Copyright and Patent laws insofar as computer "programs" are concerned.

3. It is important to do so because the operational elements of a computer can bridge both the Copyright and Patent laws, but in critically different ways. As computer operations are technically complex and in a sense "invisible" to those not conversant in computer science (lawyers and judges (and law professors) included) it is easy to confuse the application of the copyright and patent laws to computers, particularly if we use such terms as "computer program" and "expression" in loose or inexact ways.

A. *The Scope of Copyright Protection for "Computer Programs"*

4. Turning first to copyright, the term "computer program" was defined by Congress in accordance with its technical meaning in computer science — "a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result." 17 U.S.C. §101. This was the definition recommended to Congress by CONTU.<sup>1</sup>

5. A "computer program" as defined in §101 is protected by copyright under §102(a)(1) as a "literary work." Elements of computer operations that do not fall within the definition of "computer program" set forth in §101 will not be subject to copyright protection, as a literary work, under §102(a)(1).

6. Copyright may subsist in matters such as flow charts or logic diagrams that depict computer operations to the extent that such matters may qualify as graphic works under §102(a)(5) of the Act. Flow charts and logic diagrams, however, do not fit the definition of "computer program" in §101

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<sup>1</sup> As set forth in my first declaration, I was a member of the National Commission on New Technological Uses of Copyrighted Works ("CONTU"), and served on the software committee.

and hence cannot qualify for protection as a literary work under §102(a)(1).

7. Congress' care in limiting the copyright protection to be afforded to "computer programs" solely to machine-executable programming expression is reflected quite clearly in §102(b) of the Copyright Act, which specifically provides:

"In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, *regardless of the form in which it is described, explained, illustrated, or embodied in such work.*" (Emphasis supplied.)

8. In part, this provision was enacted to deal with possible efforts to extend copyright coverage for "computer programs" to the utilitarian processes underlying them. As stated in both the House and Senate Reports on §102(b):

"Some concern has been expressed lest copyright in computer programs should extend protection to the methodology or processes adopted by the programmer, rather than *merely to the 'writing' 'expressing his ideas.* Section 102(b) is intended, among other things, to make clear that the expression adopted by the programmer is the copyrightable element in a computer program, and that *the actual process or methods embodied in the program are not within the scope of the copyright law.*"

S. Rep. 473, 94th Cong., 2d Sess. 54 (1976); H.R. Rep. No. 1476, 94th Cong., 2d Sess. 57 (1976) (emphasis supplied).

9. In my first declaration, I pointed out that CONTU felt strongly that the underlying ideas of computer programs should not be subject to patent-type protection under the copyright laws and that the existence of a copyright on a computer program should not in any way inhibit the utilization of computers to achieve the same results that can be achieved

with a copyrighted program. CONTU was urged, for example, to modify §102(b) so as *not* to exclude from copyright protection the logical choices made by those personnel working on the design phase of program development.<sup>2</sup> CONTU rejected this proposal because it would have been inconsistent with the traditional nature of copyright protection for particular forms of expression and not for underlying processes.

10. CONTU likewise declined to adopt a recommendation by proponents of copyright protection for the logic of computer operations that would have amended the Copyright Act to provide that "[a] computer program may be a derivative work of a flow chart and either may be a derivative work of a literary work."<sup>3</sup> Such a provision, had it been adopted, could have effectively granted monopolies over logical processes through the registration of copyrights on flow charts, irrespective of whether such processes would meet patentability requirements.

#### B. *The Scope of Patent Protection for the "Art" Expressed by Computer Programs*

11. Turning now to the Patent law, it is immediately clear that it does not cover a "computer program" as that term is defined in the Copyright Act. That is, a patent cannot be obtained on the programmer's choice of *programming language* — the form of expression comprising the copyrightable subject matter.

12. What the Patent law does cover is, as set forth in §101 of the Patent Code: "any new and useful process, machine,

<sup>2</sup> See Transcript of Proceedings CONTU, May 7, 1976, Testimony on behalf of Information Industries Association, at 130-132. The suggested amendment to §102(b) provided as follows:

"However, copyright protection may exist in a collection of ideas or abstractions, arbitrarily selected from a plurality of alternative ideas or abstractions or in a discretionary pattern of events or processes."

<sup>3</sup> *Id.* at 122



manufacture, or composition of matter, or any new and useful improvement thereof. . . ." 35 U.S.C. §101. It is provided in 35 U.S.C. §100(b) that "[t]he term 'process' means process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material."

13. There is an obvious equivalence between the types of matter protectable by the patent laws, and the types of matter *excluded* from copyright protection under §102(b) of the Copyright Act.

14. The Supreme Court has confirmed recently that the processes implemented by computer programs may constitute patentable subject matter. *See Diamond v. Diehr*, 450 U.S. 175 (1981). If these processes reflect sufficient novelty and utility, they are subject to protection under the Patent law, with the patentee having the exclusive right to make, use and sell the invention for 17 years.

15. The Patent law's protection of processes meeting this standard for patentable subject matter is strong evidence of the appropriate demarcation between copyright and patent law in terms of the protection of different elements of computer operations.

16. As set forth in the declaration of James B. Gambrell, the logical routines that a computer program causes a computer to perform — the "results" that the statements or instructions "bring about" — are regarded as processes or methods under the Patent law. *See Gambrell Declaration ¶ 7.*

17. It is plain, therefore, that due regard to the careful terminology used by Congress in defining a computer program in §101 of the Copyright Act, and in excluding "processes" and "methods of operations" from copyright protection under §102(b), requires denial of any copyright claim for protection, as a computer program/literary work under §102(a)(1), of the logical routines the program causes the computer to perform.

C. *Congress' Demarcation of Responsibility as Between Copyright and Patent Law for Protecting Different Elements of Computer Technology is Grounded on the Long-Standing Distinction Between Forms of Expression, On the One Hand, and Systems, Methods and Processes, On the Other*

18. Congress' specific limitation of copyright protection for a computer program is consistent with the utilitarian nature of computer operations. Computer programs are not works of fiction, musical compositions, or other types of works having an artistic or entertainment end purpose. The end purpose of a computer program is to achieve a utilitarian result, *i.e.*, the computer's performance of logical operations in a way that produces the desired practical consequence. One cannot compare, therefore, the underlying processes of a computer program with, say, the underlying plot structure of a novel or a screenplay of a movie. This, of course, is the distinction recognized by the Supreme Court long ago in the seminal decision of *Baker v. Selden*, 101 U.S. 99 (1879).

19. The Copyright Act has never protected such things as rules, methods, processes, or systems, even before the statutory codification of that principle in § 102(b). *See, e.g., Morris v. Proctor & Gamble Co.*, 379 F.2d 675 (1st Cir. 1967); *Affiliated Enterprises, Inc. v. Gruber*, 86 F.2d 958 (1st Cir. 1936); *Brief English Systems, Inc. v. Owen*, 48 F.2d 555 (2d Cir.), *cert. denied*, 283 U.S. 858 (1931). Copyright in terms of utilitarian works subsists solely in those particular *forms of expression* that are recognized by the Act, such as a writing which expresses a process in an original way (§102(a)(1)), or a graphic presentation thereof (§102(a)(5)). These provisions and the cited cases make clear that the subsistence of copyright does not prohibit a user from practicing the art or process described in the work. Copyright cannot be used to block access to the ideas or utilitarian functions described in a copyrighted work.

20. An understanding of Patent law, on the other hand, makes clear that these utilitarian aspects of computer software are not left without protection. Consider the following example. Suppose Steel Company A puts together a team of engineers to create a better process for fabricating steel. Much effort and creative talent go into the work of successfully designing a new process. The engineering team then reduces the process to diagrams and the diagrams are given to other employees with the responsibility of generating a narrative pamphlet explaining the process for use in the company's many plants. The pamphlet is then copyrighted.

21. Surely, it can be seen that the copyrighting of the pamphlet does not protect the utilitarian process itself, no matter how detailed the description of the process within the pamphlet.

22. Thus, if Steel Company B were to obtain a copy of the pamphlet and extract the "logical flow" of each step in the process and write its own manual describing that process in language that does not substantially duplicate the language of the copyrighted manual, no copyright infringement would result even though both pamphlets describe the very same process in equivalent detail. The same result obtains as a matter of Copyright law if Steel Company B actually practices the new steel fabricating process developed by Steel Company A.

23. This illustration is but a direct application of *Baker v. Selden*, 101 U.S. 99, 104 (1879), in which a unanimous Court laid down what is undisputedly the law today:

"The use of the art is a totally different thing from a publication of the book explaining it . . . . Whether the art might or might not have been patented, is a question which is not before us. It was not patented, and is open and free to the use of the public."

24. Quite clearly, what Steel Company A should have done was seek patent protection for the processes themselves. If the processes are not sufficiently novel for patent protection or otherwise do not meet the historic substantive requirements for patent protection, the steel company's complaint should not be directed toward some alleged insufficiency in the Copyright Act, but rather to the public policy choices made by Congress in implementing the constitutional copyright and patent grants.

25. In my opinion, precisely the same infirmity resides in IBM's claim that the copyright it obtained on its program also protects the art — the processes — practiced by the computer when so instructed by the program.

26. This country has for a long time drawn a very definite boundary between the competing interests of encouraging competition through promoting a free market and a constantly expanding public domain in ideas (including utilitarian processes and methods) and rewarding true innovation by means of laws granting limited monopolies over defined subject matters.

27. This is the express purpose of Art. I, §8, cl.8 of the Constitution ("To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries"). As a general rule, public policy is strongly in favor of everyone having full access to and use of the various elements described in §102(b) of the Copyright Act, on the theory that society will be benefited more by the competition and broadened base for experimentation resulting from repeated replications of new ideas and processes than it will be from protecting the first iteration of an idea or process within a legal envelope of monopoly protection.

28. In my view, therefore, the issue of whether a computer's logical processes are part of the copyright subsisting in the "program" (as the term is defined in §101) does not



depend on whether the person devising such operations has "expressed" himself in some semantic sense. Alexander Graham Bell undoubtedly engaged in creative "expression" when he mapped out the first telephone. But had he not secured a patent on that invention, his description of it in a copyrighted book or article clearly would not have given him patent-type protection for his innovative work. Again, this principle was settled long ago by the Supreme Court in *Baker v. Selden*, involving a copyrighted book showing a highly detailed book-keeping system. The Court's famous and still fully appropriate distinction between the realms of copyright and patent seems particularly apt here:

"[T]he principle is the same in all [cases]. The description of the art in a book, though entitled to the benefit of copyright, lays no foundation for an exclusive claim to the art itself. The object of the one is explanation; the object of the other is use. The former may be secured by copyright. The latter can only be secured, if it can be secured at all, by letters-patent." 101 U.S. at 105.

29. It is thus not the purpose of the Copyright law, as it is the purpose of the Patent law, to provide incentives for industrial or technological progress. Rather, copyright protects only particular forms of "original" expression. The creativity, ideas and utilitarian aspects of a copyrighted work must look elsewhere for legal protection.

30. To argue that copyright protection should be afforded to computer program processes that are not novel enough to satisfy the statutory requirements for patent protection because they are the result of creative effort and the investment of substantial resources, is to voice what may be a legitimate concern in the wrong legal environment. The Copyright law is not the forum for determining how to deal with such a problem, assuming one exists. The history of copyright in the United States and the language of the current statute make clear that copyright is not the right vehicle for IBM to obtain what it wants.

31. The language of the Copyright Act makes it clear that Congress has been unwilling to grant monopolies to utilitarian processes under the aegis of copyright. In the context of computer programs the statutory protection extends only to the statements and instructions that make the machine perform. Consequently, protection for the underlying logic of a computer program must be sought under the Patent Act (or perhaps trade secret law) or not at all.

Executed this 20th day of May, 1985, at Cambridge, Massachusetts.

/s/ ARTHUR R. MILLER  
Arthur R. Miller

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

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Civil Action  
No. 90-11662-K

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LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.

*Defendant.*

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DECLARATION OF JUDITH OLSON

I, JUDITH OLSON, hereby declare under penalty of perjury as follows:

A. *Academic and Other Professional Credentials*

1. I am a full Professor in the School of Business Administration and in the Department of Psychology at the University of Michigan.

2. I was awarded a Bachelor of Arts degree in Mathematics and Psychology from Northwestern University in 1965, and a PhD in Mathematical Psychology from the University of Michigan in 1969. I was a Postdoctoral Fellow in Cognitive Psychology at Stanford University in 1970.

3. I have published approximately 33 papers, 18 of which are on the subject of the design of computer user interfaces and other human/machine interface topics. I have delivered

lectures and papers at over 20 symposia on computer user interface topics. A copy of my current curriculum vitae is attached in Exhibit A to this declaration.

4. From 1982-89, I was a member of the National Research Council's Committee on Human Factors. This Committee is a standing committee whose members are appointed by the National Academy of Science's research arm, the National Research Council. Its members consist of twelve nationally recognized researchers who convene about four times a year in Washington, D.C. to recommend to governmental funding agencies those research areas that should take top priority for funding in the near future. This Committee recommends policy for the National Science Foundation, the Air Force Office of Scientific Research, the Army Research Institute, the Office of Naval Research, the Nuclear Regulatory Commission, and the National Air and Space Administration. During my tenure on the Committee, I participated in or chaired five workshops on human factors issues sponsored by the Committee.

B. *Industrial Experience*

5. From 1980 to 1983, I worked as a member of the technical staff and a technical supervisor at Bell Laboratories in Holmdel, New Jersey. During my tenure there, I designed the user interfaces for new communications computer programs. These user interfaces consisted of a mixture of both graphics and command words.

6. When I first arrived at my Division of Bell Laboratories, I was the only engineer out of a group of 300 engineers devoted to human factors analysis and other human/machine interface issues. During my three years at Bell Laboratories, I built two human factors groups consisting of eleven PhDs in Psychology and Computer Science and eight support persons. In addition, I designed, funded and built a human factors laboratory, implemented a summer internship program for graduate students in psychology and computer science, and helped



shape the current practice of involving human factors analysts through the entire software design process, from market analysis through implementation.

7. I have also served as a consultant to Chrysler Corporation, Unisys, TRW, NYNEX and Electronic Data Systems. This work focused, among other things, on developing methods for efficiently redesigning user interfaces for Computer Aided Design (CAD) systems, expert systems for automobile diagnosis, and banking applications. This work also focused on developing management plans for incorporating human factors analysis into the product development lifecycle.

C. *The Academic Discipline of Computer-Human Interaction*

8. There is a discipline devoted to the study of computer-human interaction (CHI), which includes as a subspecialty the design of efficient and suitable user interfaces for computers. Computers present a special challenge for interface designers, because computers place many cognitive demands on the user—the user must figure out what the computer can do as well as the steps necessary to accomplish desired tasks, and then must be able to remember the proper steps at appropriate times in the course of work. Thus, computer user interfaces must be engineered to be efficient with respect to the cognitive processes users go through in using the computer.

9. The CHI discipline is an increasingly important one as personal computer technology becomes more and more ubiquitous in both business and homes. Efficient, well-engineered user interfaces are a crucial key to realizing the potential of the personal computer to revolutionize the efficiency of business. The CHI discipline is recognized, studied and practiced both in academia and by industrial and business practitioners.

10. Several professional societies and interest groups are devoted to the study of computer-human interaction and computer user interface design. One of the most prominent and

important ones is the Special Interest Group on Computer-Human Interaction (SIGCHI) of the Association for Computing Machinery (ACM).

11. Each year, SIGCHI sponsors a major conference devoted to CHI issues. These conferences regularly draw several thousand participants from around the world. Papers presented at each year's SIGCHI conference are published in the Proceedings of the conference.

12. I served as the technical co-chair of the 1991 SIGCHI conference held on April 28–May 2, 1991, which was attended by approximately 2500 people. In that role, I was responsible for the planning and selection of the technical content of the proceedings and the papers to be presented. I have chaired many other symposia on CHI issues.

13. Several other conferences devoted to CHI issues are regularly held. Examples of these include the Institute of Electrical & Electronics Engineers (IEEE) Workshop on Visual Languages, the ACM Symposium on User Interface Software and Technology, and the American Association for Artificial Intelligence (AAAI) Workshop on Architectures for Intelligent Interfaces.

14. In addition to the ACM, several other societies are devoted to addressing CHI issues, in whole or in part. Examples of these societies include the Human Factors Society and the Cognitive Science Society, of which I am a member.

15. A host of professional journals are devoted exclusively to, or regularly publish, scholarly research on CHI issues. Some examples of these journals include the International Journal of Man-Machine Systems, Human Computer Interaction, Organizational Computing, ACM Transactions on Office Information Systems, IEEE Computer Graphics and Applications, Cognitive Science, Cognitive Psychology, and Management Information Systems Quarterly.

16. I currently serve, or have served in the past, on the editorial boards of the following journals: Management Information Systems Quarterly, Organizational Computing, Human Computer Interaction, Psychological Review, and Memory and Cognition.

17. Academics who work in the field of CHI and computer user interface design would normally be expected to attend conferences devoted to CHI issues and to publish papers in the proceedings of these conferences and in the previously mentioned scholarly journals.

18. Over the last 10 years, I have attended approximately 15 conferences, symposia and seminars devoted to CHI issues. I cannot recall ever having seen Bernard A. Galler at any of these meetings or that he presented any papers at any of these meetings.

19. I also regularly read articles in the scholarly journals that publish material related to the CHI field. I am unaware of any paper that Mr. Galler has ever published on the subject of CHI, in any of the scholarly journals or otherwise.

20. I do not consider Mr. Galler to be an expert in the CHI field in general, or in the design of computer user interfaces in particular. Based on Mr. Galler's academic credentials, with which I am familiar, I believe that other academics and practitioners who work in the CHI field also would not consider Mr. Galler to be an expert in that field. To my knowledge, Mr. Galler has never before held himself out as an expert on CHI issues in general or computer user interface issues in particular.

#### *D. My Work at the University of Michigan*

21. Throughout my academic career, I have been a cognitive scientist doing research concentrated in the area of computer user interfaces and other cognitive aspects of computers, among other things. In particular, I study CHI issues and their application to the business world. One of my

specialities is cognitive engineering—the use of cognitive psychological principles to design efficient, easy to use computer and other human/machine interfaces for the business environment.

22. Among the courses I teach at the University of Michigan is a high level graduate business school course titled "Human Interface to Information Technology." A significant part of this course is concerned with user interface design, training and measurement in a corporate context.

23. I regularly teach seminars on CHI issues to doctoral candidates. I have acted as a dissertation advisor to more PhD candidates working in computer user interface issues than any other faculty member at the University of Michigan.

24. To my knowledge, Bernard A. Galler has never been asked to serve as a dissertation advisor, or a member of the dissertation committee, for any student working in any aspect of the CHI field.

25. I am regularly asked to referee papers on various CHI issues, particularly as related to computer spreadsheet programs, for the following: Communications of the ACM, ACM Transactions on Office Information Systems, Cognitive Science, Journal of Applied Psychology, Cognitive Psychology, Perception and Psychophysics, Journal of Verbal Learning and Verbal Behavior, Management Information Systems Quarterly. I also regularly review grant proposals for the National Science Foundation, the National Institute of Mental Health, and the National Institute of Education.

#### *E. Familiarity with Spreadsheet Products*

26. I am very familiar with Lotus 1-2-3, with Borland's Quattro and Quattro Pro spreadsheets, and with several other spreadsheet products. Indeed, Quattro Pro was selected as the recommended spreadsheet for use by students at the University of Michigan.



27. I have spent a significant portion of my academic career studying and evaluating the user interfaces of spreadsheet programs generally, and of Lotus 1-2-3 in particular, using well recognized principles of psychology and business analysis.

#### F. *The Command Hierarchy of Lotus 1-2-3 Is a System*

28. The command hierarchy of Lotus 1-2-3—the command words and their order—is a system for performing numerical calculations on a spreadsheet. I, along with numerous PhD students under my direction, have for many years applied the principles of cognitive science and human factors analysis to study the efficiency and quality of design of this system.

29. We study the efficiency of the system various ways—for example, we measure the time it takes users to perform tasks with an electronic equivalent of a stopwatch, measuring the time between each keystroke in thousandths of seconds, noting the exact sequence of keystrokes. From this we infer the mental and cognitive processing a user is engaging in while using the system, allowing us to determine at what points the user is examining the menus and at what points the user is performing sequences of keystrokes from memory. Based on this analysis, we determine whether the commands are ordered in a logical, efficient and sensible arrangement. I and several others have published papers devoted solely to the results of this analysis of the Lotus 1-2-3 system.

#### G. *The Role the Words Play in the Lotus 1-2-3 System*

30. From a cognitive science viewpoint, the step-by-step process that a user goes through in exercising the Lotus 1-2-3 system to accomplish a task is as follows:

(a) First, the user forms a goal that he or she wishes to accomplish using the system (such as insert a new row of cells).

(b) Second, the user engages in a cognitive analysis to determine, either from the choices of functions available in the interface or the system's documentation, the proper command steps that will accomplish the user's goals in this system.

(c) Third, the user presses the necessary keys to activate the functions identified by the words on the screen and evaluates the result.

31. The command words are a central and inseparable part of the Lotus 1-2-3 command system. These words identify the functional choices available to the user, and the system cannot be used without them. The words are required in order for the user to be able to perform the cognitive analysis necessary to determine the command steps that will accomplish the user's goal.

32. The command words do not explain to the user how to use the system—they merely identify the functions that are available in the system. To the extent the user needs explanation and education in using the Lotus 1-2-3 system of commands and in making the correct choice of functions to accomplish a task, that explanation is provided by the documentation for the program, by the help screens, by the tutorials Lotus supplies with the program, and to some extent by the long prompts in the second menu line.

33. Sophisticated users of Lotus 1-2-3 often over time become so familiar with the sequences of command steps necessary to accomplish various tasks that they need no longer examine the words to select the proper steps. Instead, such sophisticated users come to treat the command steps as purely a sequence of keystrokes. These users are able to go directly from the desired goal to typing the keystrokes necessary to accomplish that goal, in much the same way that an experienced typist would automatically type the letters of a word on a typewriter keyboard.

34. Thus, sophisticated users of Lotus 1-2-3 drop the mental process (the cognitive analysis step) in using the command system. For these users, the necessary sequence of commands (and the correlative keystrokes) are merely an automatic stimulus/response sequence that has been learned from intimate familiarity and repeated use of the words of the Lotus 1-2-3 command system. For example, if the sophisticated user desires to insert a new row of cells into the spreadsheet, he or she merely types /WIR on the keyboard, without going through the cognitive analysis of pressing the slash key to bring the menus onto the screen, then selecting the WORK-SHEET command, then the INSERT command, followed by the ROW command. Based on many measurements, for these types of users, each successive keystroke requires on average only one third of a second to execute.

#### H. *The Importance of The Specific Words And Organization*

35. I have read Bernard A. Galler's assertion in ¶ 88 of his Declaration originally submitted in the case of *Lotus Development Corporation v. Paperback Software Int'l*, Civil Action No. 87-0076-K (the "First Galler Declaration"), that possible variations to the command words of a user interface "are limited only by the resourcefulness of developers and . . . by the constraints of language." I believe this assertion is incorrect. To be usable, each of the words in the command hierarchy of a spreadsheet product must convey to the user the function it identifies. With respect to each command there are a very narrow range of words that can perform this function—for example "copy," "replicate," or "duplicate" might serve for the same function. Moreover, shorter, more common words are preferred to enhance recognition and conserve space on the screen.

36. The particular word originally chosen for each function in Lotus 1-2-3 was of no particular importance to users so long as it conveyed the particular function. Lotus 1-2-3 would have been just as successful if it used "replicate" instead

of "copy," or "duplicate" instead of "copy." Of course, the choice of each word had to be consistent with the design rules of the product—two words starting with the same first letter could not be present on the same level of the hierarchy.

37. I have read the Affidavit of Mitchell D. Kapor filed in the case of *Lotus Development Corporation v. Paperback Software Int'l*, Civil Action No. 87-0076-K, in which Kapor states that the commands in the Lotus 1-2-3 hierarchy were organized according to functional considerations such as grouping by functional similarity. For the most part, my own research and observation bears that out, although research has shown that there are somewhat more functional and usable organizations of the commands than the one Kapor adopted.

38. I believe that the particular hierarchical organization of commands adopted by Kapor did not contribute to the success of Lotus 1-2-3. Any functional organization that was as logical and orderly as the one Kapor adopted would have worked just as well, because other aspects of the user interface made the product sufficiently usable to overcome any flaws in the design of the command hierarchy. That the hierarchy itself was not responsible for Lotus 1-2-3's success is demonstrated by the fact that the product was an enormous success, notwithstanding the fact that the hierarchy contained some well documented flaws from a cognitive science point of view.

#### I. *The Role and Importance of Macros*

39. Although the specific words in the command hierarchy and their specific organization had no particular significance at the time of the development and the initial release of Lotus 1-2-3, the words and their order acquired great commercial significance later because users embedded that system comprised of those words and their order into their own spreadsheet files in the form of macros.



40. I use the term "macro" as defined on page 166 of the Reference Manual for Lotus 1-2-3 Release 2: "A macro is a set of instructions made up of a sequence of keystrokes and commands that you type into a worksheet as cell entries. After you have entered and named the macro, you can invoke it. Whenever you type the macro name, 1-2-3 reads the instructions and performs the specified tasks." Many frequently used macros written by users consist primarily of stored keystroke sequences representing sequences of commands in the menu command hierarchy. However, macros may also contain commands that do not have equivalents in the menu command hierarchy, such as the "/X" commands, which provide certain advanced macro capabilities like branching and customization of menus.

41. People write and use macros for a number of reasons. As stated on page 166 of the Reference Manual for Lotus 1-2-3 Release 2, "Macros are most useful for:

- Automating frequently used 1-2-3 commands
- Typing the same label many times in a worksheet
- Performing a repetitive procedure that requires a series of sequential commands
- Developing a customized worksheet for someone who is not familiar with 1-2-3"

42. Macros can be very long and complicated. For example, the following macro allows someone to extract data from another file (such as a corporate database) and re-format it for use in a Lotus 1-2-3 spreadsheet, which is a common application of macros for business:

```

vi      /fit{?}~
        /dprfcfe{?}~
        i.{end}{down}~
        o{right}~g

```

43. The first line of this macro opens the file in which the desired data is contained, using the name of the file that the user types in response to a prompt. The second line specifies a "recipe" for how the program should break up the incoming data stream into individual items that will be placed into cells of the spreadsheet. The third line instructs the program where to store the incoming data stream that is to be broken up into individual units. The fourth line instructs the program where to place the data after it has been broken up into individual units and then tells the program to perform the breaking up process.

44. Macros are particularly important in corporate environments, as they enable all members of a relevant group to enter, organize, calculate, and present data in the same way without error or deviation. Frequently in a business environment, spreadsheets containing macros written by one user are distributed to other users, who must be able to execute the macros contained in the spreadsheets given to them. For example, the macro described above might be distributed to another person to enable that person to fetch data from another source (such as a departmental database) and place it into that person's spreadsheet for further analysis.

#### J. *The Role the Words and Their Order Play in Macros*

45. The words of the Lotus 1-2-3 command hierarchy and their order play a central role in the writing and execution of macros. As this Court stated in its opinion in the case of *Lotus Development Corp. v. Paperback Software Int'l*, 740 F. Supp. 37 at 65: "Because macros may contain many menu choices, the exact hierarchy—or structure, sequence and organization—of the menu system is a fundamental part of the functionality of the macros."

46. When a user writes a macro containing Lotus 1-2-3 menu commands, the user stores those commands in the macro in accordance with the word and letter designation and hierarchical order defined by the Lotus 1-2-3 hierarchical

menu command system. In writing the macro, the user uses the words in the menus to select the functional steps that will accomplish the goal the user desires to accomplish and automate, and then embeds those steps in the macro using the command designations defined by those words and in the order dictated by the hierarchical structure of the menus containing the words.

47. The user may also use the words in the menus to debug the macro in the event that it does not run correctly or produces erroneous results. To debug the macro, the user often must step through the macro, one step at a time, watching the menus that come up on the screen to understand what the sequence of commands in the macro is doing and what input may be required by the user when the macro is running, in order to determine whether a step is missing or other error exists in the macro, or whether the steps are not in the proper order as defined by the menu hierarchy.

48. The need to debug macros arises frequently. Macros are often written for a spreadsheet configured in a very specific way. With subsequent use, the configuration of the spreadsheet often gets changed. Even small changes to the spreadsheet, such as the addition of a row or column (a new item in a budget or a new period of time, for example) can make the macro fail to accomplish the desired result. The user must then examine the macro in detail, step by step, to figure out how to modify it to make it work correctly in the new situation, and the menus are needed for this process.

49. Once written, the macro represents a set of steps defined by the user that must be performed in a particular designated way—that is, according to the word and letter designation and hierarchical order of the Lotus 1-2-3 menu command system. Because the user has stored menu commands in the order dictated by the Lotus 1-2-3 menu command system, in order to run the macro to accomplish the user's intended result, the functional steps stored in the macro

must be executed in the particular way defined by that system.

50. Thus, Galler is simply incorrect when he states (at ¶ 129 of the First Galler Decl.),

There is no technical constraint compelling even a spreadsheet program providing the same functionality as 1-2-3 to do so by using the same set of commands . . .

#### K. *Dissimilarity of 1-2-3 and Borland Interfaces*

51. From a cognitive science point of view, the user interface of Quattro Pro differs vastly from that of Lotus 1-2-3 in virtually every respect. By "user interface," I mean all aspects by which the user and a computer program interact with one another visually, in terms of physical interaction, and with respect to the approach made available to the user for deciding which functions to invoke to accomplish a goal. The user interface of Lotus 1-2-3 includes the menu hierarchy (the command words and their order), the type of command invocation system (such as pop-up, pull-down, and moving cursor), the long prompts, the help screens, the input mechanisms (such as keyboard and mouse), and other visual aspects of the screen displays produced by the program (such as highlighting of menu items and scrolling down to parts of the spreadsheet not currently visible on the screen).

52. The user interface of Lotus 1-2-3 is very dissimilar—visually, in its physical interaction with users, and in the approach it makes available to the user for solving problems—from the user interface of Quattro Pro in both its native mode and its 1-2-3 compatible mode.

#### L. *Visual Differences*

53. Visual differences between Lotus 1-2-3 and Quattro Pro are readily apparent from the screen shots described in and submitted with the Declaration of Laurie Flesher in this case. I have examined these screen shots extensively, and I find



them to accurately represent the screens containing the various commands depicted therein. I have also examined the Lotus 1-2-3, Quattro Pro, and Quattro products themselves in forming my opinions.

54. The command invocation system is presented visually to the user in very different ways in the two products because the products are based on entirely different control mechanisms. In Lotus 1-2-3, the command invocation system or control mechanism appears as a set of full word commands displayed in a two-line moving cursor format, in which the first line presents "active" choices of functions that the user may currently select, and the second line often presents "non-active" choices that will become available if the user selects the highlighted command on the first line.

55. Quattro Pro uses an entirely different control mechanism. In Quattro Pro, menu commands are presented inside pull down windows. Commands are presented not only as words but also as graphical images—icons, buttons, and scroll bars. These graphical images, which are entirely absent in Lotus 1-2-3, appear as part of the visual display throughout operation of the program. This same mechanism is used in all product "modes"—Quattro Pro native, Quattro, user-defined, and, of course, 1-2-3 compatible modes.

#### M. *Differences in Physical Interaction*

56. Quattro Pro's user interface is also radically different in its physical interaction with the user. The command invocation system of Lotus 1-2-3 is designed so that it can be exercised only through use of the keyboard. Commands are selected either by using the cursor keys to highlight the desired command, then pressing enter, or by typing the first letter of the command on the keyboard.

57. In contrast, Quattro Pro is intended to be used with a mouse, in addition to the keyboard, so different physical actions are done by the user, in conjunction with the different visual methods of display. The user may invoke menu com-

mands in one of two ways with the mouse: (a) by clicking and holding the mouse button on a command word to pull down the menu of subcommands under that command, then "dragging" (sliding) the mouse cursor down the list to the desired command and releasing the button, and (b) by clicking and releasing on the menu to pull its window down, then clicking and releasing on the desired command within the menu. Other functions may be invoked by clicking the mouse on icons, buttons and scroll bars.

#### N. *Differences in Problem Solving Approach Made Available to the User*

58. One of the most significant differences between the user interfaces of Lotus 1-2-3 and Quattro Pro from a cognitive science point of view is the difference in approach each product makes available to the user for solving problems. I am informed that Lotus has attached great significance to the fact that the second line of the menu invocation system presents "non-active" commands—in other words, potential choices of next steps and not active functions.

59. From a cognitive science point of view, I appreciate the significance of this design. The Lotus system is designed in significant part to inform users of what *future* choices will be available to the user for taking the next step after the user selects one of the presently available choices. This information is conveyed through the long prompts, which often list the subcommands that will become available at the next level of the menu hierarchy if the currently highlighted command term is selected at the present level. Thus, at appropriate points, the Lotus system attempts to aid the user in selecting the proper command sequence by showing the user where that sequence is headed next at a given point in the sequence.

60. Quattro Pro presents a very different approach to the user for selecting the proper command sequence. In contrast to Lotus, Quattro Pro almost never displays the next steps that will become available in the sequence after the current step.

Instead, Quattro Pro employs cascading menus that remain on the screen, displaying all *prior* steps to let the user observe the command sequence that led him to a particular point.

61. The Quattro Pro user judges whether he has taken the correct command sequence by examining where he has been, not where he is headed. This difference in approach made available to the user manifests itself in the long prompts. In contrast to Lotus 1-2-3, the long prompts of Quattro Pro almost never present next steps to the user. Rather, they explain the result that will be accomplished if the presently selected command is invoked. It is therefore not surprising that Quattro Pro's long prompts have different words than those of Lotus'—they fulfill an entirely different role.

62. Lotus 1-2-3 and Quattro Pro differ in the approaches they make available to the user for solving problems in one other significant respect. Quattro Pro displays "state" information in the menus, which shows the current state or setting of various command choices, such as margin width, to assist the user in determining whether the settings are correct or might need to be changed. "State" information is not automatically displayed as part of the Lotus 1-2-3 command hierarchy, and in order to discover state, the user must invoke the command that affects that state or, in some instances, invoke the "Status" command.

#### O. *Differences in Command Hierarchy*

63. I have read Bernard A. Galler's assertions in ¶¶ 29 and 33 of his Declaration submitted in this case that the "menu trees" of Lotus 1-2-3 and Quattro Pro in 1-2-3 compatible mode exhibit "an extremely close parallelism" and are "substantially similar"—indeed, even "virtually identical." I believe that these assertions are incorrect, as a simple examination of the menu trees of the two respective interfaces reveals.

64. I use "menu tree" as defined by Mr. Galler in ¶ 75 of the First Galler Declaration—namely, a visualization of the hierarchical menu structure as a "tree," with dependent commands "branching" from commands at prior levels.

65. I have examined the printouts of the menu trees of Lotus 1-2-3's interface, Quattro Pro's 1-2-3 compatible interface, and Quattro's 1-2-3 compatible interface, described in and submitted with the Declaration of Laurie Flesher in this case.

66. Because of the vast size of the menu trees of Quattro and Quattro Pro, it was not practical to depict them in schematic form. Therefore, the menu trees have been printed in columns of a spreadsheet in which columns to the right of another column contain commands "lower" in the tree than the command in the column to the left. I find that these printouts faithfully set forth and compare the menu trees of the respective products they portray, and accurately illustrate the vast differences in the various command structures.

67. The spreadsheet printouts quite readily reveal the vast dissimilarities in the menu trees of the products. The Lotus 1-2-3 menu tree contains 469 commands. The menu tree of Quattro Pro's 1-2-3 compatible interface contains 5215 commands, a ratio of 11 to 1 more commands. Although each of the 469 commands of Lotus 1-2-3 may be found somewhere within the menu tree of Quattro Pro's 1-2-3 compatible interface, such commands are interspersed at all levels throughout the 5215 commands of the menu tree of the 1-2-3 compatible interface.

68. There is not a single level or layer of the hierarchy in which the Quattro Pro 1-2-3 compatible command hierarchy does not contain menus that are different from those of the Lotus 1-2-3 hierarchy, including the topmost level. Significant differences in the menu trees of the two interfaces exist at all levels or layers.



69. Because of these differences in the command hierarchies and the use of cascading menus, there is no screen comparison of the interface of Lotus 1-2-3 and Quattro Pro's 1-2-3 compatible interface that would reveal identity in visual presentation and in command names in any screen at any point in the hierarchy.

70. The huge number of new commands in the Quattro Pro menu trees are not merely extra choices that have been tacked on to the Lotus 1-2-3 menu tree. Rather, these new functions in Quattro Pro interact with the other elements of the user interface so as to create an entirely different visual perception and physical response by the user, and a different way in which the user interacts with the spreadsheet to get work done.

71. For example, the "View" menu included in the topmost level of the Quattro Pro 1-2-3 compatible menu hierarchy allows the user to change the basic model of presentation of the program—from a full screen single spreadsheet (which is all that is available in Lotus 1-2-3) to a presentation in which multiple spreadsheets can be stacked one on top of another like physical spreadsheets laid out on a desktop, or "tiled" together in a tiling pattern, with edges of adjacent spreadsheets touching one another. The commands within the View menu allow the user to change the appearance and physical interaction with the elements on the screen in the following ways:

- To choose between a "stacked" or "tiled" presentation of spreadsheets
- To pick which of multiple open spreadsheets is to be the "active" one (the one that the user is currently manipulating)
- To "zoom" the currently active spreadsheet to full screen size
- To change the size or position of the active spreadsheet on the screen

72. Moreover, the WINDOW subcommands under the WORKSHEET menu allow the user to change the appearance and physical interaction with the elements on the screen in the following ways, among others:

- To remove the column and row borders from the screen
- To condense the spreadsheet display into a "map view" consisting of columns that are one-character wide and that contain, in place of data, codes that indicate the type of data in each cell.

73. Similarly, the DISPLAY MODE command of the Quattro Pro 1-2-3 compatible interface also enables the user to change many fundamental aspects of the visual presentation of the interface. The user can elect to have the information displayed on the screen in either "character" mode (in which only standard textual letters and characters can be displayed in an arrangement of 25 rows by 80 columns) or in "graphics" mode. In graphics mode, Quattro Pro makes the following display changes:

- If the user has a mouse, the cell pointer will be displayed as an arrowhead rather than as a block.
- If a graph is inserted in the spreadsheet, the user can see the actual graph on the screen when function key 10 is pressed (in character mode, inserted graphs are indicated only by highlighting to show where the graph will appear when printed)
- Some menus will be displayed as "galleries"—depiction of options (such as graph types) as graphical representations rather than words
- The elements of the display appear in finer resolution, and the mouse cursor movements are much smoother on the screen.

74. In sum, the new functionality available through Quattro Pro's 1-2-3 compatible interface not only produces a dif-

ferent visual display, it greatly alters the way the user can interact with the program.

#### P. *Differences in Quattro*

75. Much of the analysis and conclusions I have described with respect the user interfaces of Quattro Pro also apply to Quattro.

76. Quattro used yet a different command invocation mechanism—"pop up" menus. But, like Quattro Pro, Quattro does not show the user where he is "headed" by displaying the next steps in the sequence of commands that will become available if the currently selected command is invoked. Instead, it presents purely "present" command choice information, displaying at any given time only a single pop up menu showing the presently available "active" commands.

77. Like Quattro Pro, the long prompts of Quattro are almost always explanatory of the current active function choices. And, again as in the case of Quattro Pro, Quattro provided other explanatory aspects in its interface, such as help screens and current state information—all of which are either different from Lotus 1-2-3 (as in the case of help screens) or have no correlative in Lotus 1-2-3 (as in the case of state information).

78. With respect to the menu hierarchy, the menu tree of Quattro's 1-2-3 compatible interface contains 3370 commands, compared to 469 commands in the Lotus 1-2-3 menu tree—a ratio of 7 to 1 more commands. Although each of the 469 commands of Lotus 1-2-3 may be found somewhere within the menu tree of Quattro's 1-2-3 compatible interface, such commands are interspersed at all levels throughout the 3370 commands of the menu tree of the 1-2-3 compatible interface. There is not a single level of the hierarchy in which the Quattro 1-2-3 compatible command hierarchy is the same as the Lotus 1-2-3 hierarchy, including the topmost level. Sig-

nificant differences in the menu trees of the two interfaces exist at all levels.

#### Q. *The Role of the Native Interface and the 1-2-3 Compatible Interface*

79. Based on human factors analysis of the Lotus 1-2-3 interface, the Borland 1-2-3 compatible interfaces, and the Borland native interfaces, it is difficult to imagine that users will find the 1-2-3 compatible interfaces easy to use for anything other than writing, debugging or executing macros.

80. The Lotus 1-2-3 user interface has well known design flaws. For example:

- Patterning after the English language, users generally tend to think of goals they wish to accomplish in the spreadsheet in a "verb-object-modifier" sequence. Thus, a user's goal might be to "retrieve (verb) a file (object) named TEXT (modifier)." A menu structure organized to enable a user to invoke commands in this order feels "natural" to the user, for it comports with the way a user tends to think of his or her goal in the mind.

The menu structure of Lotus 1-2-3, however, is not consistently organized in this way. Lotus 1-2-3 often requires the user to invoke commands in a "object-verb-modifier" sequence to accomplish many goals, which feels less "natural" to the user. For example, the commands FILE RETRIEVE NAME, WORKSHEET ERASE and DATA SORT are all commands that are of the "object-verb-modifier" type. Other goals, however, do require a "verb-object-modifier" sequence, thereby mixing up the order in which the user must think about command invocation for various different tasks. For example, the commands ERASE WORKSEET and INSERT ROW are commands that are of the "object-verb-modifier" type. This inconsistency in structure makes the Lotus 1-2-3 command hierarchy more difficult to learn and to master.



- The second line of the two-line moving cursor, which often shows commands that will become available in the next level down of the menu structure if the currently highlighted command is selected, is often confusing to new users. New users frequently think that the commands listed in the second line present additional "active" choices that can be invoked at the current level of the menu structure. Thus, users often type the first letter of a command listed in the second line, which results either in the program issuing a "beep" (to indicate an illegal letter choice), or activation of an unintended command on the first line, causing undesired consequences that the user may then have to repair.

81. When all the enhanced functionality of the Borland product is added into the Lotus 1-2-3 interface at various points in the 1-2-3 compatible interface, the 1-2-3 compatible interface becomes awkward, difficult and inefficient to use as a system for solving numerical problems.

82. Such awkwardness and inefficiency results principally for two reasons. First, addition of new functions into the existing Lotus 1-2-3 command hierarchy often effectively changes the meaning of existing menus, as illustrated by the additions to the Lotus WORKSHEET menu in the 1-2-3 compatible interface. Second, such additions often cause confusion as to where to look for the functionality residing in previously existing menus, as illustrated by Borland's new VIEW menu.

83. Because Lotus 1-2-3 was designed with two-line moving cursor menus, in which commands are arranged horizontally across the screen, the number of commands that can be placed in any given menu is limited by the width of the screen to about ten. As a result of this constraint, the designers of the Lotus 1-2-3 menus were forced to group commands together under a limited number of top level menus. Accordingly, the WORKSHEET top level menu was created to group together a number of miscellaneous commands that, although very diverse in their functionality, affected the entire worksheet.

84. Because much of the new functionality of Borland's Quattro and Quattro Pro products has no correlative in Lotus 1-2-3, such functionality does not really fit well within any of the Lotus 1-2-3 top level menu categories. Nevertheless, because screen width limitations severely limit the addition of new top level menus, the new functionality had for the most part to be placed somewhere within the existing Lotus 1-2-3 top level menus. In particular, much of the new functionality had to be put in the WORKSHEET menu, because that is the only top level Lotus menu akin to a "Miscellaneous" category—all other top level Lotus 1-2-3 menus relate to very specific types of functionality, such as COPY, MOVE, FILE, PRINT and the like.

85. The addition of the new Borland functionality to the WORKSHEET menu changes substantially the meaning of that menu. Previously, it grouped together diverse functions that all related to entering data into, editing and styling the spreadsheet itself. Many of the new Borland functions that were added to this menu, however, are not of this type—such as UNDO and MACRO commands. Thus, the presence of the new Borland functions in the WORKSHEET menu effectively changes its meaning from a category of "WORKSHEET" functions to a category of "OTHER" functions. The user now is unsure of what types of "other" functions that menu contains, which breeds inefficiency and awkwardness in looking for functions.

86. A second illustration of the awkwardness and inefficiency that results from addition of substantial new functionality to the Lotus 1-2-3 command hierarchy is the new VIEW menu. The VIEW menu commands allow the user to see and manipulate multiple spreadsheets on the screen simultaneously. Lotus 1-2-3 has a WORKSHEET WINDOW menu, which contains commands that allow the user to split a single worksheet into two parts and view the parts simultaneously. Because the WORKSHEET WINDOW menu commands all affect only a single worksheet, that menu did not easily acco-

moderate the new VIEW commands, which affect multiple worksheets.

87. Accordingly, Borland created a new menu titled "VIEW" at the topmost level of the 1-2-3 compatible command hierarchy. Because this new menu is at the topmost level, it is apt to confuse the user as to where to look for the old functionality. In particular, I would expect that many users will be misled to look for the old WORKSHEET WINDOW functions in the VIEW menu, rather than in their original location in the Lotus 1-2-3 hierarchy.

88. In sum, users will find it awkward to access the new functionality of the Borland products, as well as the original Lotus 1-2-3 functionality, through the 1-2-3 compatible interface because of its poor human factors design.

89. From a human factors point of view, the native interfaces of the Borland products are quite superior to the 1-2-3 compatible interfaces. For example:

- *Conceptual Grouping.* There are two general kinds of activities a user may engage in while using a spreadsheet: (a) entering data and performing calculations on that data, and (b) formatting the data for a pleasing and easy-to-read appearance. The Borland native interfaces group the commands for each of these kinds of activities consistently together each under its own menu (under the EDIT and STYLE menus, respectively). The 1-2-3 compatible interfaces do not, but rather spread the two kinds of activities throughout different menus and place commands relating to both kinds of activities within the same menu. For example, commands for entering data and performing calculations are contained in the WORKSHEET, RANGE, COPY and MOVE menus, which also contain commands for formatting the data. Thus, the user is forced to bounce around through multiple menu subtrees no matter what type of major subtask the user is attempting to accomplish.

- *Additional Visual Cues That Aid Organization.* The native interface menus present additional visual cues to the user that make the organization of the command choices clearer to the user. For example, under the STYLE menu in the native interface, there is a cluster of menu choices that all relate to columns, and these choices are separated from the other choices within the menu by a horizontal line. Similarly, in the FILE menu, items that a user invokes when beginning work on a file (NEW, OPEN and RETRIEVE) are clustered together and separated by a horizontal line from those items that a user invokes when ending work on a file (SAVE, SAVE AS, CLOSE and the like). These additional visual organizational cues are absent entirely from the 1-2-3 compatible interface menus of Quattro. Although present to a limited extent in the 1-2-3 compatible interface menus of Quattro Pro, these visual cues in most cases do nothing more than separate the new commands that Borland has added to that interface that have no equivalent in Lotus 1-2-3.

90. Because, from a human factors viewpoint, the Borland native interfaces are much better designed and easier to use than the 1-2-3 compatible interfaces, I believe that users of the Borland products would naturally be inclined to use the native interface for ordinary spreadsheet work, and not the 1-2-3 compatible interfaces. I would expect that the 1-2-3 compatible interfaces will be used only to write, debug and execute Lotus 1-2-3 macros.

#### R. *The "Mental Model" of Lotus 1-2-3*

91. I have read ¶ 30 of the First Galler Declaration in which Mr. Galler asserts that in designing a computer program the developer should create a "mental model" for the program, which Mr. Galler defines as a "conception of the program's behavior, which the user is intended to form in operating the program based upon the user's perception of the user interface and externals." Later, in ¶ 106 of his Affidavit, Mr. Galler



asserts that the menu structure of Lotus 1-2-3 presents the mental model of Lotus 1-2-3 to the user.

92. Mr. Galler's definition of "mental model" does not comport with how that term is generally defined in the CHI field. Although I am familiar with the scholarly literature in the CHI field discussing "mental models," and have myself written papers on that subject, I have never heard anyone in the field use that term to include the menu commands of a user interface.

93. With respect to computer user interfaces, a "mental model" is usually defined to mean a metaphor formed in the user's mind about the internal aspects of the system that aids the user in selecting the proper commands in the interface and otherwise making use of the computer program to accomplish a task. The mental model underlying both Lotus 1-2-3 and the Borland products is the spreadsheet metaphor—a collection of cells in spatial relationships that can contain numbers, formulas and cross-references among themselves, as well as, in the case of macros, commands.

94. Under this definition, the menu commands of Lotus 1-2-3 do not comprise or convey a mental model, for the commands themselves do not aid the user in determining which commands should be chosen, or in what sequence.

I declare that the foregoing is true and correct, and that I have personal knowledge of the matters set forth above. If called as a witness, I could and would competently so testify.

Executed under penalty of perjury under the laws of the United States this 26 day of September 1991 at Palo Alto, California.

/s/ JUDITH OLSON  
Judith Olson

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

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Civil Action  
No. 90-11662-K

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LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

—against—

BORLAND INTERNATIONAL, INC.

*Defendant.*

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DECLARATION OF VERN L. RABURN

I, VERN L. RABURN, hereby declare under penalty of perjury, as follows:

A. *Identity of Declarant*

1. I am the chairman and chief executive officer of Slate Corporation, a company I co-founded in 1990 to develop software applications for pen-based computer systems.

2. In 1982, I joined Lotus Development Corporation ("Lotus") as executive vice-president and general manager. At Lotus, I had ultimate responsibility for the "launch" and initial marketing of Lotus 1-2-3.

3. Prior to my tenure at Lotus, I served as President of the Consumer Products Division of Microsoft Corporation, located in Bellevue, Washington. In this capacity, I organized

and directed Microsoft's entry into applications software development and retail software distribution.

#### B. *Other Experience*

4. I hold a B.S. degree in industrial technology from California State University at Long Beach. In 1976, I opened one of the nation's first computer stores and went on to become operations manager for Byte Industries. After leaving Byte Industries, I formed a software division for GRT Corporation, the first company to license, manufacture and market packaged consumer software for personal computers.

5. After leaving Lotus in 1982, I joined Symantec Corporation, as Vice-President of Marketing. Symantec develops, manufactures and markets microcomputer software. I served as president and chief executive officer of Symantec from 1983 to 1987 and as chairman of Symantec's board of directors from 1986 to 1990.

6. From 1987 to 1989, I was also a general partner in the venture capital firm of Cooper, Raburn & Kniffin, which specialized in funding and nurturing very early-stage, high technology start-up companies.

#### C. *Responsibilities at Lotus*

7. I was personally recruited by Mitch Kapor to join the management of Lotus, then a startup company, in 1982, and I joined the company prior to the launch of 1-2-3 in October of that year. I was given the title of executive vice-president and general manager and given primary responsibility for all aspects of Lotus' business, with the exception of product development and accounting, which continued to be Mr. Kapor's responsibility.

8. As part of my responsibilities at Lotus, I had ultimate responsibility for devising and implementing the initial product "roll out" or "launch" of 1-2-3, the initial marketing plan for the product and the product's initial distribution plan. I

successfully negotiated Lotus' initial exclusive distribution agreement with Softsel Corporation, then the largest software distributor.

9. A vital component of 1-2-3's marketing plan, and, hence, a key component of my job was to create interest in and demand for 1-2-3, by giving product demonstrations and presentations to distributor executives, personal computer software dealers and potential users. During the months of November and December of 1982 and January of 1983 much of my time was consumed with product demonstrations and presentations; I gave approximately 150 such demonstrations prior to the first commercial shipment of 1-2-3 on January 26, 1983.

#### D. *Perceived Value of the Command Hierarchy*

10. It was my goal in these presentations to identify and demonstrate those features of 1-2-3 that my staff and I believed were most likely to interest potential users in the purchase of the product and which were likely to be perceived by potential users as important advancements beyond features available in the leading competitive product, VisiCalc. In each presentation, it was my practice to ask for questions and comments from those in attendance. As time went on, I continued to modify my presentation to emphasize those features that prior attendees had indicated was of greatest interest to them.

11. The "command hierarchy" of 1-2-3 played no ascertainable role in the commercial success of the product. The "command hierarchy" was not identified and presented by me or my staff as an important feature of the product, nor did dealers, potential users or others in attendance identify the command hierarchy as important to them. By "command hierarchy," I mean the particular hierarchical organization of command names in 1-2-3.



12. The "command hierarchy" portion of the Lotus 1-2-3 user interface is a system—a particular step by step approach—designed by Kapor and Sachs for the solution of numerical problems using a spreadsheet. Indeed, the Release 1.0 users' manual for 1-2-3 unambiguously characterized the hierarchy as a "system":

1-2-3's commands are organized into a multi-level menu system.

Release 1.0 Users' Manual at 53. (Attached as Exh. A.)

13. Lotus' 1-2-3 was demonstrated by me and others in the company as a solution to some of the principal functional problems of VisiCalc. In my view, it succeeded commercially for this reason. The key features of 1-2-3 that I emphasized and attendees asked about in demonstrations included (roughly in order of importance):

- (a) variable column widths in the spreadsheet;
- (b) speed of the product for moving around the spreadsheet and recalculation;
- (c) the user's ability to highlight within a specified "range" of the spreadsheet;
- (d) full words in the screen presentation with progressive disclosure of additional functions;
- (e) integrated graphics capabilities; and
- (f) data manipulation capabilities.

14. The specific words in the command hierarchy of 1-2-3 were of no particular consequence to me, my staff or potential users when I demonstrated the product. Any word would have sufficed for a command so long as the word conveyed to the user in a direct and simple way the function of the command. This was true with respect to all spreadsheet products (and, for that matter, application programs generally) not just Lotus 1-2-3. For example, VisiCalc used the command "R" for

"replicate" in its command hierarchy because commands were listed alphabetically and the "C" command was previously used for "column." Yet the choice of "replicate" as opposed to "copy" had no commercial effect or significance because both words convey the functionality of the command.

15. Similarly, the precise order of the commands in the hierarchy was of no particular importance to me, my staff or attendees at the demonstrations. The fact that 1-2-3 commands were listed in a functional ordering as opposed to alphabetically was an important departure from VisiCalc, but the precise order of the commands could certainly have varied without consequences. Potential users would have readily accepted any easily useable, functional grouping of commands because the advancements in other aspects of 1-2-3 so significantly overshadowed VisiCalc.

16. The initial advertising plan for 1-2-3, as implemented by me, touted "ease of learning" as an important feature of the product. The basic advertising and marketing slogan for 1-2-3 was "easier, faster, better." As the particular ads we published explain, "ease of learning" was a reference to context-sensitive on-screen "help" instructions and explanations, "long prompts," the ability of the user to highlight and work within ranges, as well as the fact that commands were set forth in full words rather than just first letters. The "command hierarchy"—the particular command names and the precise order of those commands—was never an ease-of-learning feature that I recall, nor was it considered an "ease-of-learning" feature by me.

#### E. *Macros in 1-2-3*

17. "Macros" or "keyboard macros" defined in the Lotus 1-2-3 Release 1.0 user's manual as a "stored sequence of keystrokes," were not part of the product development specification for 1-2-3 as envisioned and prepared by Mitch Kapor. Nor was the macro capability requested by potential customers. Rather, Mitch Kapor added a macro capability as

a free feature for marketing reasons. He wanted 1-2-3 to include the same functionality as a popular program known as "Prokey," which allowed users to record sequences of keystrokes.

18. The macro capability in 1-2-3 was originally conceived merely as an automated keystroke system. The 1-2-3 user's manual for Release 1.0 even refers to keyboard macros as the "Typing Alternative." 1-2-3 User's Manual Release 1.0 at 107 (Attached as Exh. B). The manual instructs users to use macros to perform "procedures" consisting of several commands "in a particular order":

There are many situations in which you'll find the Typing Alternative useful:

\* \* \*

• You need to perform a certain procedure, involving several commands and/or entries in a particular order.

*Id.* at 107.

#### F. *Relative Importance of Code and UI*

19. I have read ¶¶ 28-52 of the Declaration of Bernard A. Galler originally filed in the case of *Lotus Development Corporation v. Paperback Software International*, Civil Action No. 87-0076-K, and I am informed as to the significance he attached to the user interface of a software product, as opposed to its code. Based on my extensive experience in the marketing and sale of software products, I believe it is fundamentally incorrect to suggest that the code of a software product is unimportant or always less important than the user interface. Of course, for some products the user interface of the product may be extremely important to its commercial success—entertainment software is a good example of such a product. In other cases, compilers for example, the user interface may be minimal, unimportant or even nonexistent. And,

in any case, a product that cannot supply necessary functional features will always fail, regardless of the interface.

20. It is my experience that in more advanced and sophisticated software development, when the user interface is perceived to be a key to the product's success, the development of the user interface will precede or move in parallel with the development of the code.

21. I believe that the success of 1-2-3 was due in significant part to the computational and screen display code written by Jonathan Sachs that made 1-2-3 a faster and more robust product than VisiCalc.

#### G. *Legal Protection for Command Hierarchies*

22. It is my understanding that, generally speaking, patents can be secured in appropriate circumstances to preclude a competitor from making products that users can operate in a manner similar to the product on which patent protection is obtained. I am also informed that copyright protection is relatively easy to secure, while patent protection is, generally speaking, far more difficult to obtain.

23. I have been involved in the personal computer industry for more than 15 years and I have held positions in the top management of a number of the industry's leading software publishers. Based on my experience, I believe that extending copyright protection to the command words and their order of a program like Lotus 1-2-3 will not promote investment, innovation, creativity or competition in the software industry generally or with respect to spreadsheet products specifically. To the contrary, extending easily obtainable monopoly-like protection will do nothing more than enable the first company that establishes a widely successful product having a particular set of ordered command words to lock users in to that company as the sole source of products.

24. Because a substantial base of users may be tied to the use of a particular system of ordered words, in order to run



existing macros or to make use of learned keystrokes to invoke functionality, permitting a company to monopolize a particular order of commands will enable it to effectively shut out competition from other companies that might provide superior products to that same base of users.

I declare that the foregoing is true and correct, and that I have personal knowledge of the matters set forth above. If called as a witness, I could and would competently so testify.

Executed under penalty of perjury under the laws of the United States this 22 day of September, 1991 at Santa Ana, California.

/s/ VERN L. RABURN  
Vern L. Raburn

## [EXHIBIT A]

**Using 1-2-3 Commands**

During every 1-2-3 session, you issue commands. For instance, the way to end a 1-2-3 session is to issue the /Quit command. Other 1-2-3 commands perform such functions as:

- Copying, moving, and deleting data from the worksheet.
- Transferring data between the worksheet and disk storage.
- Printing reports.
- Drawing graphs.
- Handling databases.

Complete details concerning the individual 1-2-3 commands appear in the "Using Commands" section of this manual. In this section, we discuss the general aspects of issuing commands.

1-2-3 commands are easy to use because they're interactive. A command may have one or more steps. At each step, 1-2-3 tells you what to enter next: a number, a range, a filename, etc. Messages from 1-2-3, called prompts, appear on the second line of the control panel. Here are some typical ones:

Enter range to copy FROM:

Enter name of file to retrieve:

Enter Sort order (A or D):

After you've entered all the specifications, 1-2-3 executes the command and (usually) returns to Ready Mode. Let's take a closer look at each of the steps involved in issuing a 1-2-3 command.

### Selecting a Command

Each 1-2-3 command has a name, consisting of one or more command keywords, such as:

/Copy

/Range Erase

/Worksheet Column-Width Set

/Quit

/Graph Options Titles

1-2-3's commands are organized into a multilevel menu system. You build up a command name by selecting one keyword at a time from menus that 1-2-3 displays in the control panel. The only thing that 1-2-3 doesn't automatically tell you is how to start:

[53]

### [EXHIBIT-B]

#### Keyboard Macros— The Typing Alternative

1-2-3 has a facility that allows you to store sequences of keystrokes for future use—during the same session or during a later one. The keystrokes might invoke one or more formatting commands, type entries, create a graph, etc.

In computer circles, a stored sequence of keystrokes is often called a keyboard macro. We'll also use the shortened form, macro.

You "attach" each macro to one of the letter keys: A,B,C, . . . Z. When you hold down the [Alt] key and type the letter, 1-2-3 automatically types all the stored keystrokes in the sequence, just as if you had typed them again yourself.

Since this facility allows you to save keystrokes, we call it the "Typing Alternative." But we won't mind if you do as the programmers do—call it "the macro facility."

There are many situations in which you'll find the Typing Alternative useful:

- You need to type the same label many times in a worksheet. For instance, "Revenues", "1st Quarter", or your company name.
- You need to perform a certain procedure, involving several commands and/or entries in a particular order. For instance, a macro might produce a printed report consisting of several sections of the worksheet, each with its own margins, character size, line spacing, etc. [A sequence of commands is a "procedure"]\*
- In a worksheet that you're developing for use by "non-technical" personnel, you wish to use some of 1-2-3's more

\* Bracketed portion is handwritten in original.



sophisticated functions. But you can't afford the time to train the personnel in the program's advanced features.

### Storing the Keystrokes

We suggest that you go through a "dry run" before using the Typing Alternative: Type the entries and/or commands, noting exactly which keys you press. Don't forget to note—[Enter] and [Space Bar]! When you're satisfied that you know precisely which keystrokes are to be saved, find some out-of-the-way cells, in an empty part of the worksheet. Then:

1. Enter the macro as one or more labels (e.g. preceded by a label-prefix).
2. Assign a special macro range name to the cell in which the keystroke sequence begins.

We'll examine both these steps in detail, then proceed to a discussion of using (invoking) macros.

[107]

### UNITED STATES DISTRICT COURT DISTRICT OF MASSACHUSETTS

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Civil Action No. 87-0076-K  
Filed in Open Court

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LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

vs.

PAPERBACK SOFTWARE INTERNATIONAL  
and STEPHENSON SOFTWARE, LTD.,

*Defendants.*

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Civil Action No. 87-0074-K

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LOTUS DEVELOPMENT CORPORATION,

*Plaintiff,*

vs.

MOAIC SOFTWARE, INC.,

*Defendant.*

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## AFFIDAVIT OF JONATHAN M. SACHS

JONATHAN M. SACHS, being duly sworn, deposes and says:

1. My name is Jonathan M. Sachs and I reside in Cambridge, Massachusetts.

2. I make this affidavit to provide direct testimony in the Phase I trial in the above-captioned actions.

3. Mitchell Kapor ("Kapor") and I are the authors and creators of the computer program known as Lotus 1-2-3 (also "1-2-3").

4. The version of Lotus 1-2-3 first sold to the public on January 26, 1983—called Release 1.0—was the result of a process of collaboration between Kapor and myself lasting approximately eighteen months.

5. In developing Lotus 1-2-3, I was primarily responsible for writing the program's source code and Kapor was primarily responsible for its design, although I also contributed to the design of the program.

6. During the period of 1-2-3's creation, Kapor and I discussed hundreds of ideas concerning possible features to include in our product and ways to express the program's functionality through its user interface. Typically, Kapor suggested a feature; we discussed it; and I attempted to implement it in the program's source code. We then reviewed the results and, more often than not, changed it again. We repeated this process countless times during this period.

7. Kapor had principal responsibility for creating the user interface of 1-2-3 and, in particular, the content and organization of its menus. My principal role concerning these aspects of the product was to ensure that the program's menus and user interface were successfully implemented in its source code.

8. During the last several months before 1-2-3 was finished I, Kapor and others at Lotus participated in a long series of

meetings, the purpose of which was to finalize and rationalize the contents and organization of the menus. Kapor ultimately decided what words would be used and where on the menu tree they would be located. I then modified the source code to reflect his changes. Again, in this period Kapor was more concerned about the user interface and I was more concerned about the program's internal workings.

9. After months of brainstorming, experimentation and implementation, Lotus 1-2-3 was commercially released. The finished product was the result of the original creative efforts of Kapor and myself (and, to a lesser extent, the other members of our development team).

Sworn to under the penalties of perjury this 27th day of November, 1989.

/s/ JONATHAN M. SACHS  
Jonathan M. Sachs